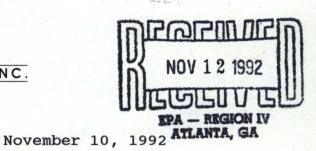
# HOWE VALLEY LANDFILL SITE CORRESPONDENCE VOL III



United States Environmental Protection Agency







- :: 7:7-

Mr. Nestor Young Remedial Project Manager U.S. EPA, Region IV 345 Courtland St. NE

Atlanta, GA. 30365

Re: Howe Valley Landfill Hardin County, Kentucky Inorganic Contamination

Job No. 0064-001

Dear Mr. Young:

As you are aware, the inorganically-contaminated soil from Site Grid Locations 1.5D and 7D have been excavated in accordance with the Inorganic Design Work Plan. These soils are currently being stored on a plastic liner and covered with plastic in the inorganic stockpile area on-site. There is currently a delay in disposing of this soil due to a planned change in landfills. As a result, we are requesting approval to fill in the inorganic pit excavations prior to disposing of the inorganically-contaminated soil.

We are resubmitting the appropriate analytical data for your review. The first set of data is from samples collected from the four walls and bottom of each pit (1.5D and 7D). These samples indicated that all samples were less than the soil action limits (SALs) except for the east wall of Area 1.5D. This sample indicated chromium levels at its SAL of 400 mg/kg. Therefore, additional soil (approximately 5 feet) was excavated from this area and an additional sample collected on October 13, 1992. This sample still indicated that the chromium was at 410 mg/kg, just above its SAL. This area was re-excavated by another 6 feet and another sample collected for verification analysis. This time the sample was at 75 mg/kg, well below the 400 mg/kg chromium SAL.

The analyses from the split samples submitted to IT Analytical Services are also included. These analyses and Wadsworth/Alert's analyses were generally within 20% of each other except for the chromium level at 7D east and both cyanide analyses. All analyses, however, are considerably below their respective SALs.

Mr. Young November 10, 1992 Page 2



Therefore, due to the anticipated delay in selecting a new RCRA landfill and disposing of the soil, we are requesting approval to fill in the two inorganic excavation areas at this time. As the data indicate, both areas have been excavated to below the prescribed cleanup levels. Please call if you have any questions. Thank you in advance for your expeditious handling of this matter.

Sincerely,

HATCHER-SAYRE, INC

James D. Knauss, Ph.D.

Project Manager

attachments

cc: Jim Mersereau-Kempf

Ed Ovsenik Carroll Coogle

JDK/bh



# 1264 7D BOTTOM 9-3-92 5:20

WO #: 88239

LAB #: A21090004-001

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# 

PARAMETER	RESULT	REPORTING LIMIT	<u>UNIT</u>	<u>METHOD</u>	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	28	2.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Copper	11	1.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Zinc	75	5.0	mg/kg	SW846 6010	9/10- 9/14/92	254020



# 1264 7D BOTTOM 9-3-92 5:20

WO #: 88239

LAB #: A2I090004-001

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# - - - - - INORGANIC ANALYTICAL REPORT - - - -

PARAMETER	RESULT	REPORTIN LIMIT	G <u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	ND	0.25	mg/kg	SW846 9010	9/11/92	255008
Solids, Total (TS)	80	0.5		USEPA 160.3	9/09- 9/10/92	253036

NOTE: AS RECEIVED ND (HONE DETECTED)



# 1265 7 BOTTOM 9-3-92 5:25

WO #: 88240

LAB #: A2I090004-002

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# ---- REQUESTED METALS ----

PARAMETER	RESULT	REPORTING LIMIT	<u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	ND	2.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Copper	ND	1.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Zinc	ND	5.0	mg/kg	SW846 6010	9/10- 9/14/92	254020

HOTE: AS RECEIVED RE (HOME DETECTED)



# 1265 7 BOTTOM 9-3-92 5:25

WO #: 88240

LAB #: A2I090004-002

MATRIX: SOLID

DATE RECEIVED:

9/09/92

# - - - - INORGANIC ANALYTICAL REPORT - - - -

PARAMETER	RESULT	REPORTING LIMIT	G <u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	ND	0.25	mg/kg	SW846 9010	9/11/92	255008
Solids, Total (TS)	89	0.5		USEPA 160.3	9/09- 9/10/92	<b>253036</b>

NOTE: AS RECEIVED

ND (NONE DETECTED)



# 1266 7 EAST 9-3-92 5:45

WO #: 88241

LAB #: A21090004-003

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# - - - - - - REQUESTED METALS - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	18	2.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Copper	9.5	1.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Zinc	49	5.0	mg/kg	SW846 6010	9/10- 9/14/92	254020



# 1266 7 EAST 9-3-92 5:45

WO #: 88241

LAB #: A21090004-003

MATRIX: SOLID

DATE RECEIVED: 9/09/92

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<u>PARAMETER</u>	RESULT	REPORTIN	G <u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	1.8	0.25	mg/kg	SW846 9010	9/11/92	255008
Solids, Total (TS)	83	0.5	%	USEPA 160.3	9/09- 9/10/92	253036



# 1268 7 SOUTH 9-3-92 6:05

WO #: 88242

LAB #: A21090004-004

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# ---- REQUESTED METALS -----

PARAMETER	RESULT	REPORTING LIMIT	<u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	180	2.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Copper	10	1.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Zinc	240	5.0	mg/kg	SW846 6010	9/10- 9/14/92	254020



# 1268 7 SOUTH 9-3-92 6:05

WO #: 88242

LAB #: A21090004-004

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# - - - - INORGANIC ANALYTICAL REPORT -

PARAMETER	RESULT	REPORTING LIMIT	G UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	2.9	0.25	mg/kg	SW846 9010	9/11/92	255045
Solids, Total (TS)	84	0.5	%	USEPA 160.3	9/09- 9/10/92	253036



# 1269 7 NORTH 9-3-92 6:18

WO #: 88243

LAB #: A2I090004-005

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# ----- REQUESTED METALS ------

PARAMETER	RESULT	REPORTING LIMIT	<u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	33	2.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Copper	10	1.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Zinc	41	5.0	mg/kg	SW846 6010	9/10- 9/14/92	254020



# 1269 7 NORTH 9-3-92 6:18

WO #: 88243

LAB #: A21090004-005

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# - - - - INORGANIC ANALYTICAL REPORT - - - - -

PARAMETER	RESULT	REPORTIN LIMIT	G <u>UNIT</u>	<u>METHOD</u>	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	ND	0.25	mg/kg	SW846 9010	9/11/92	255045
Solids, Total (TS)	84	0.5		USEPA 160.3	9/09- 9/10/92	<b>253036</b>

NOTE: AS RECEIVED ND (NONE DETECTED)



# 1272 1.5D NORTH 9-3-92 6:48

WO #: 88244

LAB #: A21090004-006

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# 

PARAMETER	RESULT	REPORTINGLIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	55	2.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Copper	14	1.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Zinc	63	5.0	mg/kg	SW846 6010	9/10- 9/14/92	254020



# 1272 1.5D NORTH 9-3-92 6:48

WO #: 88244

LAB #: A2I090004-006

MATRIX: SOLID

DATE RECEIVED: 9/09/92

-	INORG	ANTC	ANAT	YTTCAL.	REPORT

PARAMETER	RESULT	REPORTING LIMIT	G <u>UNIT</u>	<u>METHOD</u>	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	0.68	0.25	mg/kg	SW846 9010	9/11/92	255045
Solids, Total (TS)	86	0.5		USEPA 160.3	9/09- 9/10/92	253036

NOTE: AS EECEIVED



# 1273 1.5D EAST 9-3-92 7:00

WO #: 88245

LAB #: A2I090004-007

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# ---- REQUESTED METALS -----

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	400	2.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Copper	190	1.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Zinc	440	5.0	mg/kg	SW846 6010	9/10- 9/14/92	254020



# 1273 1.5D EAST 9-3-92 7:00

WO #: 88245 LAB #: A2I090004-007

MATRIX: SOLID

DATE RECEIVED: 9/09/92

INURGANIC	ANALYTICAL	KEPURT	_	_	_	-	-	_	-

PARAMETER	RESULT	REPORTING LIMIT	G <u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	8	10.5	mg/kg	SW846 9010	9/11/92	255045
Solids, Total (TS)	85		%	USEPA 160.3	9/09- 9/10/92	253036



# 1274 1.5D SOUTH 9-3-92 7:12

WO #: 88246

LAB #: A2I090004-008 DATE RECEIVED: 9/09/92

MATRIX: SOLID

<u>PARAMETER</u>	<u>RESUL</u> T	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	310	2.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Copper	53	1.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Zinc	360	5.0	mg/kg	SW846 6010	9/10- 9/14/92	254020



#### 1274 1.5D SOUTH 9-3-92 7:12

WO #: 88246

LAB #: A2I090004-008

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# ---- INORGANIC ANALYTICAL REPORT ----

PARAMETER	RESULT	REPORTING LIMIT	G <u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	0.62	0.25	mg/kg	SW846 9010	9/11/92	255045
Solids, Total (TS)	85	0.5	%	USEPA 160.3	9/09- 9/10/92	253036



# 1275 1.5D WEST 9-3-92 7:20

WO #: 88248

LAB #: A2I090004-009

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# ---- REQUESTED METALS -----

<u>PARAMETER</u>	RESULT	REPORTINGLIMIT	<u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	200	2.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Copper	8.0	1.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Zinc	150	5.0	mg/kg	SW846 6010	9/10- 9/14/92	254020



# 1275 1.5D WEST 9-3-92 7:20

WO #: 88248

LAB #: A21090004-009

MATRIX: SOLID

DATE RECEIVED: 9/09/92

INORGA	NTC	ANALYTICAL	REPORT

PARAMETER	RESULT	REPORTIN LIMIT	G <u>UNIT</u>	<u>METHOD</u>	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	1.4	0.25	mg/kg	SW846 9010	9/11/92	255045
Solids, Total (TS)	86	0.5		USEPA 160.3	9/09- 9/10/92	253036



# 1276 1.5D BOTTOM 9-3-92 7:37

WO #: 88249

LAB #: A2I090004-010

MATRIX: SOLID

DATE RECRIVED: 9/09/92

REQUESTED	METALS
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PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	130	2.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Copper	36	1.0	mg/kg	SW846 6010	9/10- 9/14/92	254020
Zinc	190	5.0	mg/kg	SW846 6010	9/10- 9/14/92	254020



#### 1276 1.5D BOTTOM 9-3-92 7:37

WO #: 88249

LAB #: A2I090004-010

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# - - - - INORGANIC ANALYTICAL REPORT - - - -

PARAMETER	RESULT	REPORTIN LIMIT	G <u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	ND	0.25	mg/kg	SW846 9010	9/11/92	255045
Solids, Total (TS)	84	0.5		USEPA 160.3	9/09- 9/10/92	<b>253036</b>

NOTE: AS RECEIVED (NONE DETECTED) ND



# 1278 TRIP BLANK 9-3-92

WO #: 88250

LAB #: A2I090004-011

MATRIX: WATER

DATE RECEIVED: 9/09/92

# ---- REQUESTED METALS -----

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	ND	0.02	mg/L	SW846 6010	9/11- 9/14/92	255036
Copper	ND	0.01	mg/L	SW846 6010	9/11- 9/14/92	255036
Zinc	ND	0.05	mg/L	SW846 6010	9/11- 9/14/92	255036

NOTE: AS RECEIVED (BORE DETECTED)



# 1278 TRIP BLANK 9-3-92

WO #: 88250

LAB #: A2I090004-011

MATRIX: WATER

DATE RECEIVED: 9/09/92

---- INORGANIC ANALYTICAL REPORT -----

PARAMETER	RESULT	REPORTING LIMIT	<u>UNIT</u>	<u>METHOD</u>	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	ND	0.005	mg/L	USEPA 335.2	9/11/92	255008

HOTE: AS RECEIVED ND (NONE DETECTED)



# 1279 7 WEST 9-4-92 5:00

WO #: 88251

LAB #: A2I090004-012

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# ---- REQUESTED METALS -----

PARAMETER	RESULT	REPORTING LIMIT	<u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium Copper	41 14	2.0 1.0	mg/kg mg/kg	SW846 6010 SW846 6010	9/10- 9/14/92 9/10- 9/14/92	254020 254020
Zinc	53	5.0	mg/kg	SW846 6010	9/10- 9/14/92	254020



# 1279 7 WEST 9-4-92 5:00

WO #: 88251

LAB #: A2I090004-012

MATRIX: SOLID

DATE RECEIVED:

9/09/92

# - - - INORGANIC ANALYTICAL REPORT - - - -

PARAMETER	RESULT	REPORTING LIMIT	G UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	ND	0.25	mg/kg	SW846 9010	9/11/92	255045
Solids, Total (TS)	81	0.5		USEPA 160.3	9/09- 9/10/92	<b>253036</b>

NOTE: AS RECEIVED

ND (NONE DETECTED)



# 1280 7C BOTTOM 9-4-92 5:15

WO #: 88252

LAB #: A2I090004-013

MATRIX: SOLID

DATE RECEIVED: 9/09/92

# ---- REQUESTED METALS ----

PARAMETER	RESULT	REPORTING LIMIT	<u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	180	2.0	mg/kg	SW846 6010	9/10- 9/14/92 9/10- 9/14/92	254020 254020
Copper Zinc	11 120	1.0 5.0	mg/kg mg/kg	SW846 6010 SW846 6010	9/10- 9/14/92	254020 254020



# 1280 7C BOTTOM 9-4-92 5:15

WO #: 88252

LAB #: A2I090004-013

MATRIX: SOLID

DATE RECEIVED: 9/09/92

#### - - - - - INORGANIC ANALYTICAL REPORT - - - -

PARAMETER	RESULT	REPORTIN	G UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	5	1	mg/kg	SW846 9010	9/11/92	255045
Solids, Total (TS)	84	0.5	%	USEPA 160.3	9/09- 9/10/92	253036



# CHAIN OF CUSTODY RECORD

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1265 7 Bottom 9/3/12		soll	1		X	X	X											X	
1266 7East 9/3/1:	2 5:45	soil	2		X	<u>x</u>	X	<u> </u>				ļ						X	
1268 750 th 9/3/92	6:05	soil	2		1	X	X											X	
1269 7North 9/3/9	6:18	501	2		X	X	X											X	
1272 1.5DNorth 9/3/9:	6548	soel	2		X	X	X										<u> </u>	V	
1273 1.50 Fast 9/3/12	7:00	soil	2		X	X	X									LTO	in Blank _	X	
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# CHAIN OF CUSTODY RECORD

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# HATCHER SAYRE, INC.

1419 10-13-92 8:30

WO #: 96735 LAB #: A2J160003-001 DATE RECEIVED: 10/16/92

MATRIX: SOLID

PARAMETER	RESULT	REPORTING LIMIT	<u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	410	2.0	mg/kg	SW846 6010	10/18-10/21/92	292009
Copper	300	1.0	mg/kg	SW846 6010	10/22-10/23/92	296023
Zinc	460	5.0	mg/kg	SW846 6010	10/18-10/21/92	292009

BOTE:

AS RECEIVED



# HATCHER SAYRE, INC.

1419 10-13-92 8:30

**WO #:** 96735

LAB #: A2J160003-001

MATRIX: SOLID

DATE RECEIVED: 10/16/92

# 

PARAMETER	RESULT	REPORTIN LIMIT	G <u>UNIT</u>	METHOD	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	33	6	mg/kg		10/19-10/20/92	293052
Solids, Total (TS)	88	0.5	%		10/19-10/20/92	294001



# CHAIN OF CUSTODY RECORD

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# HATCHER SAYRE, INC.

1436 11-3-92 14:55

WO #: A0598

LAB #: A2K040005-001

MATRIX: SOLID

DATE RECEIVED: 11/04/92

# ---- REQUESTED METALS -----

PARAMETER	RESULT	REPORTING LIMIT	UNIT	<u>METHOD</u>	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Chromium	75	2.0	mg/kg	SW846 6010	11/04-11/05/92	309047
Copper	100	1.0	mg/kg	SW846 6010	11/04-11/05/92	309047
Zinc	160	5.0	mg/kg	SW846 6010	11/04-11/05/92	309047

NOTE:

AS RECEIVED



# HATCHER SAYRE, INC.

#### 1436 11-3-92 14:55

WO #: A0598

LAB #: A2K040005-001

MATRIX: SOLID

DATE RECEIVED: 11/04/92

# ---- INORGANIC ANALYTICAL REPORT -----

PARAMETER	RESULT	REPORTING LIMIT	G <u>UNIT</u>	<u>METHOD</u>	PREPARATION - ANALYSIS DATE	QC <u>BATCH</u>
Cyanide, Total	ND	0.25	mg/kg	SW846 9010	11/04/92	309034
Solids, Total (TS)	79	0.5	%	USEPA 160.3	11/04/92	309042

NOTE: AS RECEIVED ND (NONE DETECTED)



## CHAIN OF CUSTODY RECORD

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Work Order: X2-09-044

Hatcher Sayre

20904402

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## Analytical Results, ug/g

Client Sample ID	Soil # 1.5D Bottom 1277	Soil # 7 East 1267	
Lab No.	01	02	
Analyte			Detection Limit
Chromium	140	51	0.8
Copper	32	9.0	0.3
Zinc	160	54	0.3
Cyanide	10	ND	0.7
Client Sample ID	Method Blank		
Lab No.			
Analyte			Detection Limit
Chromium	ND		0.2
Copper	ND		0.05
Zinc	ND		0.1
Cyanide	ND		0.7

ND = Not detected at or above the reported detection limit



CHAIN OF CUSTODY RECORD

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November 9, 1992

Mr. Nestor Young Remedial Project Manager U.S. Environmental Protection Agency, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

RE: Pilot Treatability Study Review Comments
Work Assignment No. 17-4XN8
Howe Valley Landfill
Howe Valley, Hardin County, Kentucky
Contract No. 68-W9-0057

Document Control No. 4400-17-ACJO

NOV 1 2 1992

EUSI V E

EPA — REGION IV

ATLANTA, GA

Dear Mr. Young:

Roy F. Weston, Inc., (WESTON®) has prepared the attached comments in response to the Pilot Treatability Study Report as specified in the Scope of Work for its Remedial Design/Remedial Action (RD/RA) oversight activities at the Howe Valley Landfill Site. WESTON is providing RD/RA oversight and project assistance to the U.S. Environmental Protection Agency (EPA), Region IV under EPA Contract No. 68-W-0057. The enclosed comments are in response to the "Pilot Treatability Study" report, prepared for Dow Corning Corporation by Hatcher-Sayre, Inc., October 22, 1992.

If you have any questions concerning these comments, please call me at (404) 448-0644.

Sincerely,

Roy F. Weston, Inc.

Ralph P. McKeen, P.E. Work Assignment Manager

cc:

Annie Godfrey, US EPA, Region IV Lester Lewis, US EPA, Region IV Randy Ferguson, WESTON

> Comments/Responses Howe Valley Landfill Site Revision: 0

Date: November 1992

Page: 1 of 2

#### ATTACHMENT

Contract No. 68-W9-0057 Work Assignment No. 17-4XN8 Document Control No. 4400-17-ACJQ

#### PILOT TREATABILITY STUDY REPORT

This report describes the results of the study to evaluate the effectiveness of soil aeration for removal of volatile organic contamination below the specified soil action levels (SAL). WESTON's review of this report focussed on the results as well as the field procedures with respect to the Pilot Treatability Study Work Plan dated August 21, 1992.

In general, the results indicate that the selected remedy will reduce organic concentrations to acceptable levels. Since the Pilot Study was operated at full-scale, the remedial action should perform equally as well. The following are comments relative to the review of the report.

#### $\sqrt{1}$ . Page 9, "Sampling and Analysis"

This section only refers to the Sampling & Analysis Plan (SAP) contained within the Pilot Treatability Study Work Plan. It would be beneficial to provide a brief description of the soil screening and confirmation sampling techniques. Although the sampling procedures are outlined in the SAP, the reader may not have access to the Work Plan document.

#### $\sqrt{2}$ Attachment I - PID/FID Readings

This is valuable documentation of the soil screening for organic vapors; however, the form should indicate which instrument (PID or FID) is being utilized to obtain this data. The comments column of this form should also contain calibration data of the instrument each day.

Comments/Responses Howe Valley Landfill Site

Revision: 0

Date: November 1992

Page: 2 of 2

## 3. Attachment II - Laboratory Analysis

All of this data and supporting Quality Assurance/Quality Control data is necessary but it would be helpful to have a summary page. There is a summary page but it does not identify analytical results. The list of analytical parameters is limited (4), so all results, sample numbers, and locations could be shown in one table.

A sample location map is needed to indicate the locations of the confirmatory samples. The SAP states that confirmation samples will be obtained on 50-foot centers. The map should illustrate this grid system with the associated sample designation.



November 9, 1992

Mr. Nestor Young
Remedial Project Manager
U.S. Environmental Protection Agency, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

RE:

Pilot Treatability Study Review Comments

Work Assignment No. 17-4XN8

Howe Valley Landfill

Howe Valley, Hardin County, Kentucky

Contract No. 68-W9-0057

Document Control No. 4400-17-ACJQ

Dear Mr. Young:

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Sincerely,

Roy F. Weston, Inc.

Ralph P. McKeen, P.E.

Work Assignment Manager

cc:

Annie Godfrey, US EPA, Region IV Lester Lewis, US EPA, Region IV Randy Ferguson, WESTON

Comments/Responses Howe Valley Landfill Site Revision: 0

Date: November 1992 Page: 1 of 2

#### **ATTACHMENT**

Contract No. 68-W9-0057 Work Assignment No. 17-4XN8 Document Control No. 4400-17-ACJO

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Comments/Responses Howe Valley Landfill Site

Revision: 0

Date: November 1992

Page: 2 of 2

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## U. S. ENVIRONMENTAL PROTECTION AGENCY REGION IV, ATHENS, GEORGIA

#### **MEMORANDUM**

## NOV 05 1992

SUBJECT: Howe Valley Landfill Site, Howe Valley, Kentucky,

Pilot Treatability Study. ESD Project No. 93E-054.

FROM: Dan Thoman, Regional Expert John

Hazardous Waste Section

Environmental Compliance Branch Environmental Services Division

TO: Nestor Young, RPM

KY/TN Section

North Superfund Remedial Branch

Waste Management Division

THRU: William R. Bokey, Chief

Hazardous Waste Section

Environmental Compliance Branch Environmental Services Division NOV 0 6 1992

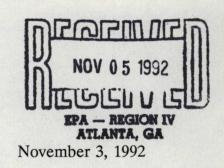
EPA — REGION IV
ATLANTA, GA

I have reviewed the above mentioned document and find it acceptable. My only comment concerns Figure 3, which is too cluttered to be of any use.

If you have any questions, please call me at 706-546-3172.

cc: Bokey/Hall





Mr. Nestor Young
Remedial Project Manager
U.S. Environmental Protection Agency, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365
WESTON W.O. No. 04400-017-091-0004

RE: Organic Liquid Investigation Work Plan Review Work Assignment No. 17-4XN8
Howe Valley Landfill
Howe Valley, Hardin County, Kentucky
Contract No. 68-W9-0057
Document Control No. 4400-17-ACJE

Dear Mr. Young:

Roy F. Weston, Inc. (WESTON) has prepared the attached comments in response to the Organic Liquid Investigation Work Plan. This Work Plan describes the rationale for further characterization of an unknown "oily" liquid encountered while excavating Area 1 for the Pilot Treatability Study at the Howe Valley Landfill Site. The Work Plan was prepared for Dow Corning Corporation by Hatcher-Sayre, Inc., and is dated October 14, 1992, 1992. WESTON is providing Remedial Design/Remedial Action oversight and project assistance to the U.S. Environmental Protection Agency under EPA Contract No. 68-W-0057.

Please call me at (404) 448-0644 if you have any questions.

Sincerely,

ROY F. WESTON, INC.

Ralph P. McKeen, P.E. Work Assignment Manager

RPM/cmf

cc:

Annie Godfrey, US EPA, Region IV Lester Lewis, US EPA, Region IV Randy Ferguson, WESTON



#### ATTACHMENT

## Contract No. 68-W9-0057 Work Assignment No. 17-4XN8 Document Control No. 4400-17-ACJE

During soil excavation activities in Area 1 for the Pilot Treatability Study, an oily liquid entered the bottom of the excavation. Laboratory analysis of this liquid have indicated the presence of several volatile and semi-volatile organic compounds. EPA and WESTON observed the area of concern during a site visit on September 22, 1992 and discussed a tentative approach with the PRP to further investigate the liquid discovery. The Investigative Work Plan details this approach and appears logically acceptable for determining the extent of contamination within this area of defined karst topographic features. The following minor inconsistencies and recommendations from WESTON's review are presented herein.

## 1. Page 9, Paragraph 1, Last Sentence

This paragraph states that these liquids have already been pumped out of the original depression on October 12, 1992. Where were these liquids pumped and how is it currently being stored? Also, did this depression recharge with liquid or did it remain dry?

## 2. Page 9, Paragraph 3

In general, the sampling procedure to evaluate the extent of sludges or contaminated soils within the depressions is unclear. The initial samples will be obtained from the large depressions with a device similar to a Shelby tube. It states that the tube will be pushed into one of the large depressions until bedrock is encountered. What if bedrock is not encountered?

## 3. Page 9, Paragraph 3

The last sentence states that an FID and/or PID will be used to screen the soil for volatile organics. WESTON recommends that the FID be utilized since published literature indicate that the PID response level to PCE (one of the primary contaminants found on site) is low.

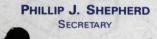
## 4. Page 10, Second Paragraph

This section states that perimeter confirmation soil samples will be analyzed for PCE only. Since the oily liquid has already been analyzed and found to have a number of different contaminants including PCE, WESTON recommends that the confirmation samples be analyzed for TCL volatile and semi-volatile organic compounds.



#### 5. Page 10, HEALTH AND SAFETY

WESTON agrees that the Health & Safety Plan for the Organic Design is adequate for actions covered in this plan; however, the statement that no contingency plan is warranted should be deleted. At the very least, the same contingencies within the Organic Design Health & Safety Plan as well as the Contingency Plan (Section 9 of the Organic Design Plan) should be followed particularly since this activity will include the handling of grossly contaminated liquids.





# COMMONWEALTH OF KENTUCKY NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FRANKFORT OFFICE PARK 14 REILLY ROAD FRANKFORT, KENTUCKY 40601

October 30, 1992

NOV 0 6 1992

EPA — REGION IV
ATLANTA, GA

Nestor Young U.S. Environmental Protection Agency 345 Courtland Street, N.E. Atlanta, GA 30365

RE: Howe Valley Landfill NPL Site

Hardin County, Kentucky

Organic Liquid Investigation Work Plan

Dear Mr. Young:

The above referenced work plan has been reviewed by the Kentucky Division of Waste Management (KDWM) and is found to be in order except for the following:

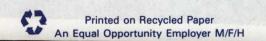
1. The plan proposes to conduct only PCE analysis for perimeter confirmation for soil contamination (p 10 of the work plan). This assumes that absence of PCE is confirmation of absence of any other contaminant and hence is not acceptable. It is suggested that the analysis be carried out for the full range of parameters.

If you have any questions, please contact Murali Rao or me at (502) 564-6716.

Sincerely,

Rick Hogan, Supervisor Federal Superfund Section

RH/MR/kb





October 30, 1992

Mr. Nestor Young Remedial Project Manager U.S. EPA, Region IV 345 Courtland St. NE Atlanta, GA. 30365

> Re: Howe Valley Landfill Hardin County, Kentucky Drum Handling Work Plan Job No. 0064-001

Dear Mr. Young:

Per your request, I am enclosing six copies of the Revised "Investigation and Handling of Drums" Work Plan for the Howe Valley Landfill Site. Additionally, at your request, I am sending one copy of the Work Plan to Keith Sims, Roy F. Weston.

Please call if you have any questions.

Sincerely,

HATCHER SAYRE, INC.

James D. Knauss, Ph.D.

Project Manager

attachment

cc: Keith Sims

Jim Mersereau-Kempf

Ed Ovsenik Carroll Coogle

JDK/bh



October 27, 1992

Mr. Nestor Young Remedial Project Manager U.S. Environmental Protection Agency, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

RE: Final Treatability Study Report Review Comments

Work Assignment No. 17-4XN8

Howe Valley Landfill Site

Howe Valley, Hardin County, Kentucky

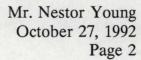
Contract No. 68-W9-0057

Document Control No. 4400-17-ACIO

Dear Mr. Young:

Roy F. Weston, Inc., (WESTON) has prepared the attached comments on the Final Treatability Study Report as specified in the Scope of Work for its Remedial Design/Remedial Action (RD/RA) oversight activities at the Howe Valley Landfill Site. WESTON is providing RD/RA oversight and project assistance to the U.S. Environmental Protection Agency (EPA), Region IV, under EPA Contract No. 68-W9-0057. The attached comments are in response to the "Final Report-Treatability Study for the Howe Valley Site, Bench-Scale Test Protocol; Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils", prepared for Dow Corning Corporation by the Dragun Corporation, August 25, 1992.

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If you have any questions concerning these comments, please call me at (404) 448-0644.

Sincerely,

ROY F. WESTON, INC.

Ralph P. McKeen, P.E.

Work Assignment Manager

RPM/cmf Enclosure

cc: Annie Godfrey, EPA, Region IV

L. Lewis, EPA, Region IV R.R. Ferguson, WESTON



Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: October 1992

Page: 1 of 5

#### **ATTACHMENT**

Contract No. 68-W9-0057 Work Assignment No. 17-4XN8 Document Control No. 4400-17-ACIO

#### REVIEW OF REPORT

## Executive Summary

- 1. Page 3, paragraph 3, sentence 2 The units (mg/m³ air/minute) do not seem to be appropriate rates for volatilization. The method for determining volatilization rate is not clearly stated.
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#### General Description

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Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: October 1992

Page: 2 of 5

would have only evaporated more moisture and PCE and would have resulted in greater PCE removal; therefore, the test "as conducted" is conservative.

## **Assumptions**

6. Page 7, paragraph 1 - Roto-tilling consists of two removal processes (biodegradation & volatilization). Was there a desire to determine the predominant process or contribution of each to the removal of PCE? If so, they should have run a control using a closed system that allows biodegradation with a minimum volatilization.

#### **Procedures**

- 7. <u>Site Soil Prep Page 8, paragraph 4</u> This section should describe how the soil was sieved and mixed.
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Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0

Date: October 1992 Page: 3 of 5

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Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: October 1992

Page: 4 of 5

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- 22. Page 15, paragraph 1 The result of 38 mg PCE/minute per soil unit is not scalable. Does this soil unit refer to 3.4kg soil or for 4 soil units. Also, this rate is based on questionable (inaccurate or incomplete) monitoring techniques.
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Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: October 1992

Page: 5 of 5

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October 27, 1992

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RE: Final Treatability Study Report Review Comments
Work Assignment No. 17-4XN8
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Howe Valley, Hardin County, Kentucky
Contract No. 68-W9-0057
Document Control No. 4400-17-ACIO

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Mr. Nestor Young October 27, 1992 Page 2

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RPM/cmf Enclosure

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Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: October 1992

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Contract No. 68-W9-0057 Work Assignment No. 17-4XN8 Document Control No. 4400-17-ACIO

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Comments/Responses
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Howe Valley, Hardin County, KY
Revision: 0
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NORCROSS→

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> Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: October 1992

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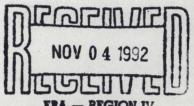
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ATLANTA, GA

RE: Intermediate/Prefinal Organic Design Plan Review Comments

Work Assignment No. 17-4XN8

Howe Valley Landfill

Howe Valley, Hardin County, Kentucky

Contract No. 68-W9-0057

Document Control No. 4400-17-ACJC

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Please call me at (404) 448-0644 if you have any questions.

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Ralph P. McKeen, P.E. Work Assignment Manager

RPM/cmf

cc: Annie Godfrey, US EPA, Region IV

Lester Lewis, US EPA, Region IV

Randy Ferguson, WESTON



Howe Valley Landfill Date: October 1992 Page: 1 of 2

#### **ATTACHMENT**

Contract No. 68-W9-0057 Work Assignment No. 17-4XN8 Document Control No. 4400-17-ACJC

The proposed remediation described under this plan is already in progress as part of a Pilot Treatability Study designed to evaluate the feasibility and effectiveness of soil aeration. Preliminary sampling data reported by the PRP contractor indicate reduced levels of VOCs in the roto-tilled soils which is encouraging for implementation of full scale efforts.

WESTON has provided the following comments and suggestions relating to both the design and construction phase of the selected remedy.

## √1. Page 50, "Construction Quality Assurance Plan"

This Construction Quality Assurance (CQA) section has been added since the draft version of the organic design plan. The function of this plan is to ensure that the constructed remedy meets project requirements. The steps detailed in this plan are thorough and if properly implemented will certainly provide the level of confidence that the completed project meets or exceeds the design criteria, plans, and specifications.

The CQA must be performed independently of the constructor and under the direction of the PRP. Mr. Maurice Lloyd cannot be designated as the CQA Manager since Hatcher-Sayre is also the Remedial Action Constructor. It is inappropriate for the firm implementing the Remedial Action to also perform quality assurance. Ideally, this function is performed by an independent Quality Assurance Team retained by the PRP; however, for this project it would be more appropriate for Mr. James Mersereau-Kempf of Dow Corning Corporation to be designated as the CQA Manager. This would give the PRP the flexibility of performing independent testing if desired. Therefore, it is recommended that Mr. Mersereau-Kempf be designated in the CQA role and that the QCA Plan and Figure 14 be modified accordingly.



Howe Valley Landfill Date: October 1992 Page: 2 of 2

The following comments pertain to Appendix C - Technical Specifications.

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## √4. Section 2.1 "Scope"

The last sentence reads that revegetation will only begin after the site has been deemed "clean" of both organic et inorganic contaminants. This implies that the entire site would have to be remediated before any revegetation takes place. It is important to proceed with revegetation in excavated areas as they are cleaned and backfilled to reduce erosion and site runoff.

It is recommended that a section be developed to address stormwater which enters excavated trenches. Excavations will be open while awaiting analytical results of confirmatory samples and also during the implementation of the organic liquid investigation.



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;10-29-92 ; 3:23PM ;

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Howe Valley Landfill Date: October 1992 Page: 1 of 2

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# **TELECOPY TRANSMITTAL FORM** ROY F. WESTON, INC.

1880-H Beaver Ridge Circle Norcross, Georgia 30071 Confirmation Telephone (404) 448-0644 Telecopy Telephone (404) 368-1168

то:	NESTON YOUNG
TELECOPY NUMBER:	347-1695
FROM:	RALPH MEKEN
DATE:	29 Oct. 1992
NUMBER OF PAGES:	
MESSAGE:	(Including Transmittel Cover Sheet)  REVIEW COMMENTS: TO
<b>:</b>	@ FINAL TRANSPORT REPORT THIS SHOULD HAVE BEEN SUBMITTED AT COURT & WEEK AGO.
	ORIGINAL IMPO CONES WILL BE MAILED TOPA, IF ALL PAGES ARE NOT RECEIVED
	PLEASE CALL

#### U. S. ENVIRONMENTAL PROTECTION AGENCY REGION IV, ATHENS, GEORGIA

#### **MEMORANDUM**

# NOV 03 1992

Howe Valley Landfill Site, Howe Valley, Kentuck SUBJECT:

Organic Liquid Investigation Work Plan.

ESD Project No. 93E-054.

FROM:

Dan Thoman, Regional Expert

Hazardous Waste Section

Environmental Compliance Branch Environmental Services Division

TO:

Nestor Young, RPM

KY/TN Section

North Superfund Remedial Branch

Waste Management Division

THRU:

William R. Bokey, Chief

Hazardous Waste Section Environmental Compliance Branch

Environmental Services Division

I have reviewed the above mentioned document and find it unacceptable. Insufficient information is provided to evaluate the sampling techniques, procedures and strategy.

It appears from reading the work plan that the organic liquid and contaminated soil have already been (or are now being) removed for treatment. Consequently, what is the point of this work plan? If its intended purpose is to present a strategy for determining the "nature and extent of contamination" it falls embarrassingly short.

If you have any questions, please call me at 706-546-3172.

Bokey/Hall cc:

ATLANTA, GA

WWLBsh



### REGION IV 345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

## FACSIMILE TRANSMITTAL COVER SHEET

Date: 10/30/9	2 Time: 4:00	a.m. 🗖 p.m.			
TO:	PALI RAO				
SUPE	RFUND BRANCH				
Company/Organiz	vation: KENTUCKY DE	EPT. FOR ENVIRONMENTAL PROTECTION			
Phone Number: _	502-564-6716	Fax Number: <u>502-564-2705</u>			
Number of Pages	Sent (Including This Cove	er Sheet):			
Please contact Ne	estor Young if this fax is re	rceived poorly or incomplete.			
Ken Nor	FROM: Nestor Young, Remedial Project Manager Kentucky/Tennessee Section North Superfund Remedial Branch Waste Management Division				
Phone Number:	(404) 347-7791 FTS: 257-7791	Fax Number: (404) 347-1695 FTS: 257-1695			
NOTES: Howe Valley Landfill Drum Removal will be					
		77			
Alsformed	Con Tuesday, N	10V 3 and Wednesday, NOV 4.			
Aleforner an EPA O	lon Tuesday, N versight contra	to will be present. I will			
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# MESSAGE CONFIRMATION

DATE: 10/30/92 TIME: 18:04

ID:EPA REGION IV WA

DATE	TIME	TX-TIME	DISTANT STATION ID	MODE	PAGES	RESULT
10/30	18:03	00'56"	564 2705	G3-S	001	OK



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

#### **MEMORANDUM**

Date:

October 30, 1992

To:

Mike Norman, Chief

Emergency Response Section

Emergency Response and Removal Branch

From:

Nestor Young

Remedial Project Manager

North Superfund Remedial Branch

Subject:

Howe Valley Landfill, Hardin County, Kentucky

Drum Removal

The purpose of this memo is to follow-up our telephone conversation with the information you requested.

Mr. Keith Sims, of Weston's TAT office in Louisville, called me today to confirm some information. They are scheduled to be onsite on Tuesday, November 3, at 8:00 a.m. I expect that the drum removal activities will be completed by Wednesday, November 4 (i.e. 16 hrs field time); however, I have instructed Mr. Sims to provide for Weston's representative to be on-site until the drum removal activities are completed.

As I mentioned in our phone conversation, please be sure to state in the delivery order (or work assignment) that this work is "additional remedial work" performed in accordance with the Consent Decree.

The following are additional details you may need:

- 1. Howe Valley Landfill is located in Hardin County, south of Vertrees Kentucky, approximately 1.4 miles south of State Road 86 at the end of Tom Duval Lane. The site is positioned at the boundary of the Constantine and Howe Valley USGS quadrangle maps, at coordinates of 37°40'05" N latitude and 86°07'30" W longitude.
- 2. EPA ID #KYD980501191
   Superfund Site Account Number: TGB04DPN8 (Enforcement RP O/S)

- 3. The TAT contractor is expected to provide oversight of the drum removal activities only. The contractor is to ensure that the drum removal is conducted in accordance with the approved Work Plan (a copy will be sent to Weston prior to mobilization) and EPA SOP protocol. The contractor must also provide the following:
  - photographs of all phases of the removal (labeled and explained)
  - a final report summarizing the activities conducted, observations, and any comments.

Thank you for your cooperation in this matter. Please let me know if there is anything else I can do or if you have any questions.



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

October 28, 1992

Mr. Rick Hogan, Chief
Federal Superfund Section
Division of Waste Management
Kentucky Department for
Environmental Protection
Frankfort Office Park
18 Reilly Road
Frankfort, Kentucky 40601

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Mr. Hogan:

Enclosed for review and comment is the Pilot Treatability Study Report for the Howe Valley Landfill Site. This report summarizes the results of the Pilot Study conducted onsite from mid-September to mid-October. This study was implemented to evaluate the selected remedy on a full-scale basis, and to get an early start on the remedial action.

Please review the document and provide comments by November 6, 1992.

As always, if there are any questions, feel free to call me at 404-347-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

October 28, 1992

Mr. Ralph P. McKeen, P.E. Work Assignment Manager Roy F. Weston, Inc. 6021 Live Oak Parkway Norcross, Georgia 30093

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Mr. McKeen:

Enclosed for your review and comment is the Pilot Treatability Study Report for the Howe Valley Landfill Site. This report summarizes the results of the Pilot Study conducted onsite from mid-September to mid-October. As you know, this study was implemented to evaluate the selected remedy on a full-scale basis, and to get an early start on the remedial action.

Please review the document and provide comments by November 6, 1992.

As always, if you have any questions, feel free to call me at 404-347-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

October 28, 1992

Mr. William R. Bokey, Chief
Hazardous Waste Section
Environmental Compliance Branch
U.S. EPA Environmental
Services Division
960 College Station Road
Athens, GA 30613-0801

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Mr. Bokey:

Enclosed for review and comment is the Pilot Treatability Study Report for the Howe Valley Landfill Site. This report summarizes the results of the Pilot Study conducted onsite from mid-September to mid-October. This study was implemented to evaluate the selected remedy on a full-scale basis, and to get an early start on the remedial action.

Please review the document and provide comments by November 6, 1992.

As always, if there are any questions, feel free to call me at 404-347-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section





October 26, 1992

Mr. Nestor Young Remedial Project Manager U.S. EPA, Region IV Atlanta, GA. 30365

> Re: Howe Valley Landfill Hardin County, Kentucky Pilot Treatability Study Job No. 0064-001

Dear Mr. Young:

Enclosed are six copies of our Pilot Treatability Study Report. Basically, the findings indicate that the study was successful. Several changes were incorporated to increase the overall efficiency.

Please call if you have any questions.

Sincerely,

HATCHER-SAYRE, INC.

James D. Knauss, Ph.D.

Project Manager

attachments

cc: Jim Mersereau-Kempf

Ed Ovsenik Carroll Coogle

JDK/bh



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

October 26, 1992

Mr. James D. Knauss, Ph.D. Project Manager Hatcher-Sayre, Inc. 3150 Custer Drive, Suite 301 Lexington, Kentucky 40517

RE: Howe Valley Landfill, Hardin County, Kentucky

Dear Mr. Knauss:

The U.S. Environmental Protection Agency has reviewed the October 14, 1992 Work Plan for the Investigation and Handling of Drums and is hereby approving the plan with the following modifications:

1. Page 16, fifth bullet

A concrete loading dock is referenced but is not included in any of the current plans. Please delete this reference, if construction of the loading dock is not planned.

2. Page 16, sixth bullet

EPA must be notified of the name of the hazardous waste transporter and the name and location of the hazardous waste disposal facility.

3. Page 16, Contaminated Soil section

It is not sufficient to characterize soils contaminated from leaking drums by air monitoring instruments only. All contaminated soil should be excavated, stockpiled, and analyzed by a laboratory for all TCL and TAL constituents. Alternatively, the soil may be analyzed for specific constituents based on the waste profile analysis conducted on the leaking drums associated with the contaminated soil samples. The data will be used to determine how the contaminated soil will be disposed of.

Please modify the document in accordance with the comments provided above, and submit seven final copies by November 6, 1992. The final document should be accompanied by a schedule for submittal of the geophysical survey results and implementation of the removal activities.

Mr. J. Knauss October 26, 1992 Page 2

Should you have any questions concerning this correspondence, please don't hesitate to call me.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section North Superfund Remedial Branch

pc: Harold Taylor, EPA Ralph McKeen, Weston

James Mersereau-Kempf, Dow Corning

Rick Hogan, KDEP

02

Tiester young

#### MEMORANDUM

Date: October 26, 1992

10/26/92 12:08

To: Jim Mersereau-Kempf Ed Oveenik, Esq. Carroll Coogle

From: Jim Knauss, Ph.D., Project Manager

Re: Howe Valley Landfill, Hardin County, KY.

Inadvertent Discovery of Drums

Tim Young, our On-Site Coordinator, called me Saturday morning and informed me that late Friday (about dark), they inadvertently uncovered some additional drums. Earlier in the week, Doug Canavello, Pyramid Environmental, had conducted a proton magnetometer survey of the Site. This area, located at approximate Grid Location 4,D.5, indicated an anomaly. This is an isolated area north of the Support Zone in the trees. On Friday, we were conducting an EM Survey in this same area and were getting ahomalies, however, there were lids and debris near the surface. Tim felt that this material may be contributing to the anomalies and, therefore, had the backhoe scrape off the top few inches of dirt and debris. While they were doing this, the teeth from the bucket hit a couple of drums and pulled off their covers.

One of the drums contained a clear liquid solvent while the other contained a semisolid material. Due to the damage caused to the drum containing liquid when it was hit, it was immediately overpacked to prevent leakage to this area. This location was then covered with plastic until the proton magnetometer and EM surveys are completed and we receive approval on the remaining drum handling plan. Five additional drums were noted; some were laying down while some were upright. The anomalies area appears to be about 18 by 60 feet.

Please call if you have any questions.





# COMMONWEALTH OF KENTUCKY NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FRANKFORT OFFICE PARK 14 REILLY ROAD FRANKFORT, KENTUCKY 40601

October 21, 1992

Mr. Nestor Young U.S. Environmental Protection Agency 345 Courtland Street, N.E. Atlanta, Ga 30365



RE: Howe Valley Landfill NPL Site, Hardin County KY
Drum Removal Work Plan

Dear Mr. Young:

This refers to the Drum Removal Work Plan faxed to us on October 16, 1992. The proposed plan appears to be in line with the need to determine the presence and subsequent removal of drums under the surface. One suggestion we have is to do the EM survey in the sinkhole location also, to ensure that no stray drums remain there.

Is there a separate workplan for free product removal/characterization? The above-referenced work plan does not address this issue which, we feel, may be addressed simultaneously.

Sincerely,

Murali Rao, Env. Eng. Tech. Federal Superfund Section

MR:kb

PHILLIP J. SHEPHERD SECRETARY



BRERETON C. JONES
GOVERNOR

# COMMONWEALTH OF KENTUCKY NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FRANKFORT OFFICE PARK 14 REILLY ROAD FRANKFORT, KENTUCKY 40801

October 21, 1992

Mr. Nestor Young U.S. Environmental Protection Agency 345 Courtland Street, N.E. Atlanta, Ga 30365

RE: Howe Valley Landfill NPL Site, Hardin County KY Drum Removal Work Plan

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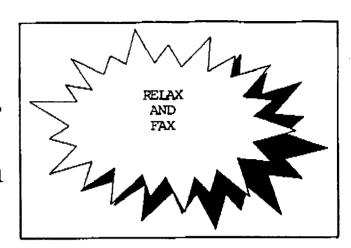
Sincerely,

Murali Rao, Env. Eng. Tech. Federal Superfund Section

MR:kb

564-6716.

DIV OF WASTE MANAGEMENT 18 REILLY ROAD OMEGA BUILDING FRANKFORT, KENTUCKY 40601



# **FAX TRANSMITTAL**

TO: Yester Young	
FAX NO: (404) 347-1695	
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FROM: Murali Rao	
FAX NO: (502) 564-	
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QUESTIONS CONCERNING THIS TRANSMITTAL, PLEASE CALL (502)



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

#### MEMORANDUM

Date:

October 20, 1992

To:

Mr. David W. Hill, Chief

Ground-Water Technology Support Unit

U.S. EPA, Region IV

From:

Nestor Young

Remedial Project Manager

North Superfund Remedial Branch

Subject:

Howe Valley Landfill, Howe Valley, Hardin County,

Kentucky

Enclosed for review and comment is the Organic Liquid Investigation Work Plan for the Howe Valley Landfill NPL Site. This work plan was submitted in response to the discovery of an unknown "organic liquid" in the ground at the site. The enclosed work plan includes background information on the circumstances surrounding the discovery of the "liquid", and outlines the proposed investigation to determine the source and extent of the contamination.

The Howe Valley Landfill NPL site is currently in the Remedial Design phase of the Superfund process. Discovery of this organic liquid was not anticipated, and the investigation of this problem will require additional work, outside the scope of the Remedial Design and Remedial Action.

Based on preliminary discussions with the Potentially Responsible Party's environmental consultant, Hatcher-Sayre, it appears that a thorough investigation may be difficult because of the karst topography of the site.

Please review the document and advise me of the adequacy of the technical approach. If you find that the approach is inadequate, please suggest an alternative investigative method. Your comments will be much appreciated by November 6, 1992.



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

October 20, 1992

Mr. William R. Bokey, Chief Hazardous Waste Section Environmental Compliance Branch U.S. EPA Environmental Services Division 960 College Station Road Athens, GA 30613-0801

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Mr. Bokey:

Enclosed for review and comment is the Organic Liquid Investigation Work Plan for the Howe Valley Landfill NPL Site. This work plan was submitted in response to the discovery of an unknown "organic liquid" in the ground at the site. The enclosed work plan includes background information on the circumstances surrounding the discovery of the "liquid", and outlines the proposed investigation to determine the source and extent of the contamination.

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Please review the document and advise me of the adequacy of the technical approach. If you find that the approach is inadequate, please suggest an alternative investigative method. Your comments will be much appreciated by November 6, 1992.

Sincerely,

Nestor Young

Remedial Project Manager

Kentucky/Tennessee Section



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

October 19, 1992

Mr. Ralph P. McKeen, P.E. Work Assignment Manager Roy F. Weston, Inc. 6021 Live Oak Parkway Norcross, Georgia 30093

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Mr. McKeen:

Enclosed is the Organic Liquid Investigation Work Plan, which outlines Dow Corning's proposal to investigate the "organic liquid" recently discovered at the Howe Valley Site. Please review the document and submit your comments by November 6, 1992.

Don't hesitate to call me if you have any questions.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

October 19, 1992

Mr. Rick Hogan, Chief
Federal Superfund Section
Division of Waste Management
Kentucky Department for
Environmental Protection
Frankfort Office Park
18 Reilly Road
Frankfort, Kentucky 40601

RE: Howe Valley Landfill, Howe Valley, Hardin County, Kentucky

Dear Mr. Hogan:

Enclosed is the Organic Liquid Investigation Work Plan, which outlines Dow Corning's proposal to investigate the "organic liquid" recently discovered at the Howe Valley Site. Please review the document and submit your Department's comments by November 6, 1992.

I have also enclosed for your file, the following document and correspondence:

- 1. Technical Memorandum, dated October 15, 1992, requesting an additional aeration area to expedite the drying and aeration of the soil
- 2. Letter to Mr. James Knauss, of Hatcher-Sayre, approving this request

If you have any questions concerning any of the enclosed documents, please don't hesitate to call me.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

October 19, 1992

Mr. James D. Knauss, Ph.D. Project Manager Hatcher-Sayre, Inc. 3150 Custer Drive, Suite 301 Lexington, Kentucky 40517

RE: Howe Valley Landfill, Hardin County, Kentucky

Dear Mr. Knauss:

The U.S. Environmental Protection Agency has reviewed the October 15, 1992 Technical Memorandum regarding addition of a third aeration area, and hereby approves of this proposed modification. It should be understood that final approval for the Organic Design Plan is pending, and therefore the EPA has not authorized implementation of the remedy. However, in the interest of expediting completion of the remedial action, EPA will allow continuation of field activities in accordance with the Pilot-Scale Treatability Study Work Plan, until final approval of the design plan is granted.

A final report for the Pilot-Scale Treatability Study is required prior to EPA's approval of the Organic Design Plan. Therefore, in order to maintain the progress being made, the Pilot-Scale Treatability Study Final Report must be submitted by October 28, 1992.

If you have any questions concerning this correspondence, please feel free to call me at 404-347-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

pc: Harold Taylor, EPA Ralph McKeen, Weston

James Mersereau-Kempf, Dow Corning

Rick Hogan, KDEP



REGION IV

345 COURTLAND STREET, N.E. ATLANTA. GEORGIA 30365

October 19, 1992

DRAFT

Mr. James D. Knauss, Ph.D. Project Manager Hatcher-Sayre, Inc. 3150 Custer Drive, Suite 301 Lexington, Kentucky 40517

Howe Valley Landfill, Hardin County, Kentucky

Dear Mr. Knauss:

The U.S. Environmental Protection Agency has reviewed the October 15, 1992 Technical Memorandum regarding addition of a third aeration area, and hereby approves of this proposed modification. However, it should be clearly understood that final approval for the Organic Design Plan is pending, and In the interest of expediting completion of the remedial action, EPA will allow continuation of field activities in accordance with the Pilot-Scale Treatability Study Work Plan, until approval of the design plan is granted.

A final report for the Pilot-Scale Treatability Study is required prior to EPA's approval of the Organic Design Plan. Therefore in order to maintain the progress being made, the Pilot-Scale Treatability Study Final Report must be submitted by October 2, 28 1992.

If you have any questions concerning this correspondence, please feel free to call me at 404-347-7791.

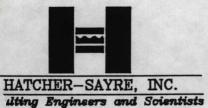
Sincerely,

Nestor Young Remedial Project Manager Kentucky/Tennessee Section North Superfund Remedial Branch

Harold Taylor, EPA Ralph McKeen, Weston James Mersereau-Kempf, Dow Corning I think it is approach

Harold, with this
Do you agree with the
Detter? Specifically, the
Statement below

Statement below



3150 Custer Drive, Suite 301 Lexington, Kentucky 40517 (606) 271-0269 (606) 271-1204 (Fax No.)

# LETTER OF TRANSMITTAL

TE NUMBER	
	DESCRIPTION
14/92	Organic Liquid Investigation Work Plan
15/92	Addition of a Third Aeration Area - Technical Memo
	Approved as Submitted For Your Information and Proved as Noted For Your Necessary Action
Requested	Returned for Corrections For Review and Comment
	TRANSMI: Approval Your Use Requested

If enclosures are not as noted, kindly notify us at once.





October 15, 1992

Mr. Nestor Young Remedial Project Manager U.S. EPA, Region IV 345 Courtland St. NE Atlanta, GA. 30365

Re: Howe Valley Landfill
Hardin County, Kentucky
Investigation and Handling
of Drums Work Plan
Job No. 0064-001

Dear Mr. Young:

As per our discussion, we have incorporated your comments on the Investigations and Handling of Drums at the Howe Valley Site. We have also converted the technical memorandum into a work plan as you requested.

Please give me a call if you have any questions. We really appreciate your help with this effort. Thank you.

Sincerely, HATCHER SAYRE, INC.

James D. Knauss, Ph.D.

Project Manager

attachment

cc: Jim Mersereau-Kempf

Ed Ovsenik Carroll Coogle

JDK/bh

#### TECHNICAL MEMORANDUM

Date: October 15, 1992

To: Nestor Young, Remedial Project Manager

U.S. EPA, Region IV, Atlanta, GA

From: Jim Knauss, Ph.D., Project Manager

Hatcher-Sayre, Inc., Lexington, KY

Re: Howe Valley Landfill, Hardin County, KY

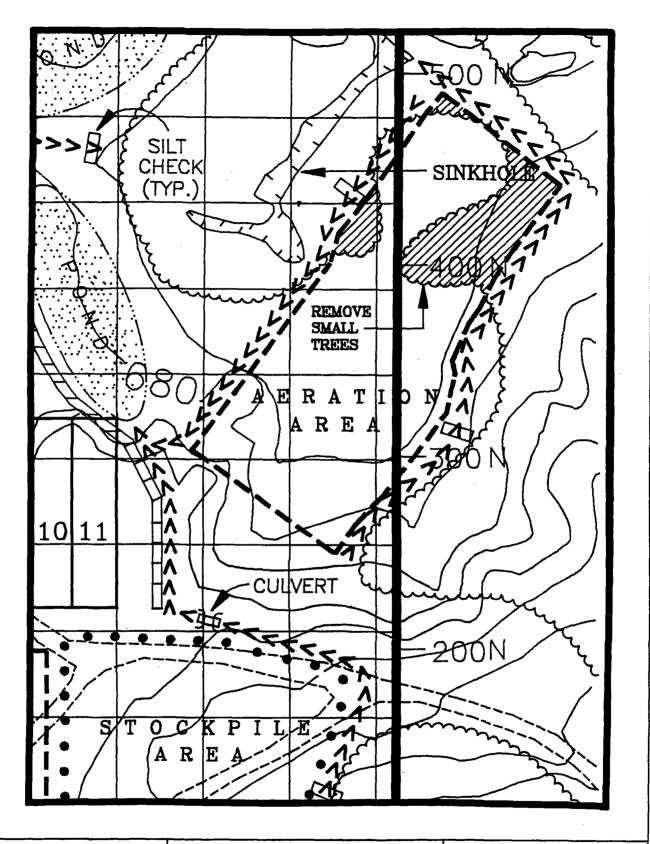
ADDITION OF A THIRD AERATION AREA

As you are aware, the larger amount of precipitation this year has greatly increased the moisture content in the Howe Valley Landfill soils. As was demonstrated in the bench-scale treatability study and has been reaffirmed in the pilot scale treatability study, this higher moisture content has significantly increased the treatability time for soil aeration.

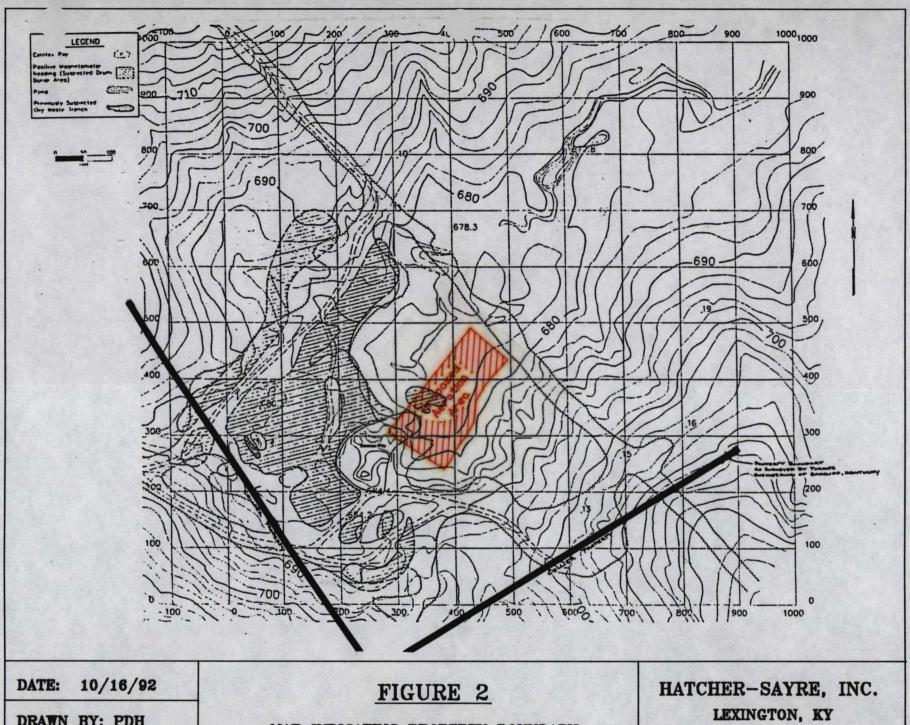
This situation has resulted in the need for an additional aeration area to expedite the drying and aeration of the soil. Therefore, a third aeration area is being proposed as indicated on Figure 1 (the affected portion of the Organic Contaminant Remediation Plan). This proposed third aeration area is situated near the central area of Dow Corning's property (see Figure 2). This area has only a thin layer of soil on top of the limestone bedrock and, as a result, at least 1 foot of fill material will be used to build it up. Additionally, since it is essentially on top of bedrock, a berm instead of a trench will have to be constructed around the area to divert precipitation run-on. Finally, as indicated on Figure 1, some of the small, second growth cedars and brush will have to be cleared during construction. No rare or endangered species are located in this area. Since time is of the essence, we are requesting approval on this proposed change as soon as possible. Upon approval, a second roto-tiller would also be brought onto the Site to expedite aeration.

Thank you,

attachment



DATE: 10/14/92	FIGURE 1	HATCHER-SAYRE, INC.
DRAWN BY: PDH	DETAIL FROM ORGANIC CONTAMINANT REMEDIATION PLAN DEPICTING	lexington, ky
APPROVED BY: JDK	THIRD AERATION TREATMENT ARKA	CLIENT NO.: 0084-001



DRAWN BY: PDH

APPROVED BY: JDK

MAP INDICATING PROPERTY BOUNDARY

CLIENT NO.: 0064-001

# 1

#### TECHNICAL MEMORANDUM

Date: October 15, 1992

To: Nestor Young, Remedial Project Manager

U.S. EPA, Region IV, Atlanta, GA

From: Jim Knauss, Ph.D., Project Manager

Hatcher-Sayre, Inc., Lexington, KY

Re: Howe Valley Landfill, Hardin County, KY

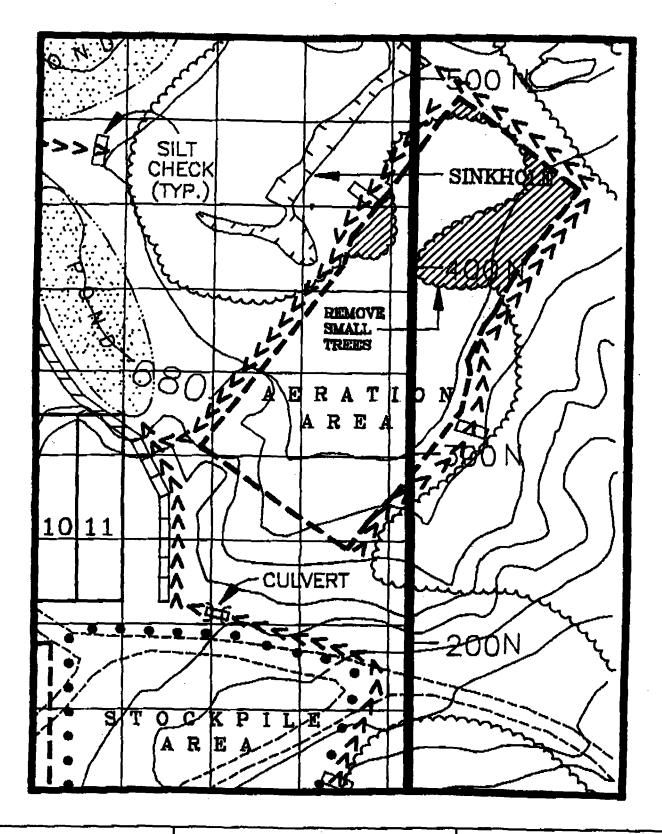
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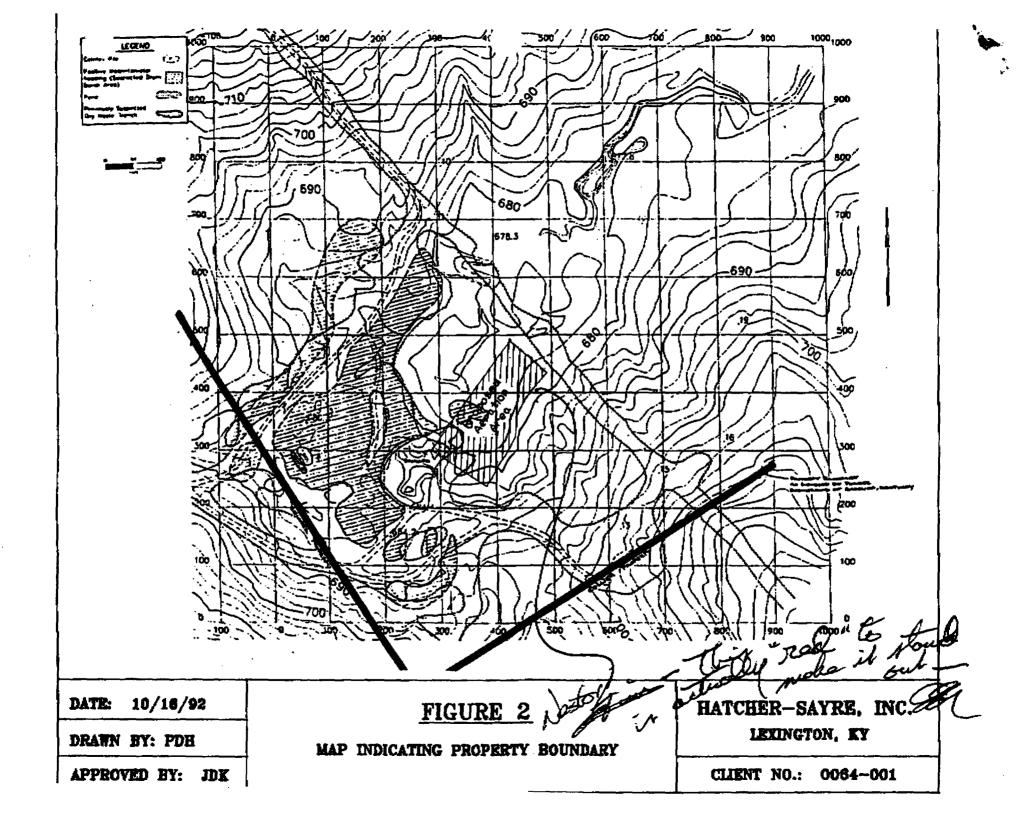
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attachment



DATE: 10/14/92	FIGURE 1	HATCHER-SAYRE, INC.
DRAWN BY: PDH	DETAIL FROM ORGANIC CONTAMINANT REMEDIATION PLAN DEPICTING	LEDINOTON, XY
APPROVED BY: JDK	THIRD AERATION TREATMENT AREA	CLIENT NO.: 0064-001





# FAX TRANSMITTAL COVER SHEET

DATE: 19/16/92
TO: Nester Going
COMPANY: U.S. EPA
FAX NO: (404)347-1695
FROM: Ein Lucina
TOTAL PAGES (INCLUDING COVER):
COMMENTS: Nestor - Hope ther
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sufficient Doz your nears -
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an original overhealt
Montee
JOB NO: DEGG-GPO
HATCHER-SAYRE, INC. OFFICE NO: (606) 271-0269 FAX NO: (606) 271-1204



### REGION IV 345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

# FACSIMILE TRANSMITTAL COVER SHEET

	UND BRANCH, WASTE MA	T. FOR ENVIRONMENTAL PROTECTION
	(502) 564-6716	Fax Number: (502) 564 - 2705
Phone Number	er: (22) 10 1 0 110	rax Number: (302) 327 2709
Number of Pa	iges Sent (Including This Con	ver Sheet): 22
Please contac	t Nestor Young if this fax is r	received poorly or incomplete.
FROM:	Nestor Young, Remedial Pro	piect Manager
	Nestor Young, Remedial Pro Kentucky/Tennessee Section	
		i
	Kentucky/Tennessee Section	n Branch
	Kentucky/Tennessee Section North Superfund Remedial E	a Branch
	Kentucky/Tennessee Section North Superfund Remedial E Waste Management Division	a Branch
Phone Number	Kentucky/Tennessee Section North Superfund Remedial E Waste Management Division er: (404) 347-7791 FTS: 257-7791	Fax Number: (404) 347-1695 FTS: 257-1695
Phone Number	Kentucky/Tennessee Section North Superfund Remedial E Waste Management Division er: (404) 347-7791 FTS: 257-7791	Fax Number: (404) 347-1695 FTS: 257-1695  L DRUM REMOVAL WORK PLAN.
Phone Number	Kentucky/Tennessee Section North Superfund Remedial E Waste Management Division er: (404) 347-7791 FTS: 257-7791	Fax Number: (404) 347-1695 FTS: 257-1695
Phone Numbers  NOTES: <u>RE</u> PLEASE	Kentucky/Tennessee Section North Superfund Remedial E Waste Management Division er: (404) 347-7791 FTS: 257-7791  : Howe Valley Landfill Review AND Comment A	Fax Number: (404) 347-1695 FTS: 257-1695  L DRUM REMOVAL WORK PLAN.
Phone Number  NOTES: <u>RE</u> PLEASE	Kentucky/Tennessee Section North Superfund Remedial F Waste Management Division er: (404) 347-7791 FTS: 257-7791  FHOWE VALLEY LANDFILL REVIEW AND COMMENT A MICAL MEMBRANDUM CONCE	Fax Number: (404) 347-1695 FTS: 257-1695  C. DRUM REMOVAL WORK PLAN.  45 SOON AS POSSIBLE. PLEASE NOTE THAT

# MESSAGE CONFIRMATION

DATE: 10/16/92 TIME: 13:12

ID: EPA REGION IV WA

DATE	TIME	TX-TIME	DISTANT STATION ID	MODE	PAGES	RESULT
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## REGION IV 345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

## FACSIMILE TRANSMITTAL COVER SHEET

Date: 10/16/92 Time: 1  TO: RALPH McKEEN	-30
Company/Organization: Roy F. (	NESTON, INC.
	Fax Number: 368 - 1168
Number of Pages Sent (Including This Please contact Nestor Young if this fax	
FROM: Nestor Young, Remedial I Kentucky/Tennessee Sect North Superfund Remedia Waste Management Divisi	ion al Branch
Phone Number: (404) 347-7791 FTS: 257-7791	Fax Number: (404) 347-1695 FTS: 257-1695
NOTES: RE: HOWE VALLEY LAND	PFILL DRUM REMOVAL WORK PLAN
PLEASE REVIEW AND COMM	MENT AS SOON AS POSSIBLE
	THANKS.

# MESSAGE CONFIRMATION

DATE:10/16/92 TIME:12:50

ID:EPA REGION IV WA

DATE	TIME	TX-TIME	DISTANT STATION ID	MODE	PAGES	RESULT
10/16	12:39	10'14"	404 3681168	G3-S	023	OK

# TECHNICAL MEMORANDUM — IST DRAFT

Date: October 15, 1992

To: Nestor Young, Remedial Project Manager

U.S. EPA, Region IV, Atlanta, GA

From: Jim Knauss, Ph.D., Project Manager

Hatcher-Sayre, Inc., Lexington, KY

Re: Howe Valley Landfill, Hardin County, KY

ADDITION OF A THIRD AERATION AREA

As you are aware, the larger amount of precipitation this year has greatly increased the moisture content in the Howe Valley Landfill soils. As was demonstrated in the bench-scale treatability study and has been reaffirmed in the pilot scale treatability study, this higher moisture content has significantly increased the treatability time for soil aeration.

This situation has resulted in the need for an additional aeration area to expedite the drying and aeration of the soil. Therefore, a third aeration area is being proposed as indicated on the attached drawing (the affected portion of the Organic Contaminant Remediation Plan). Since time is of the essence, we are requesting approval on this proposed change as soon as possible. Upon approval, a second roto-tiller would also be brought to the Site to expedite aeration.

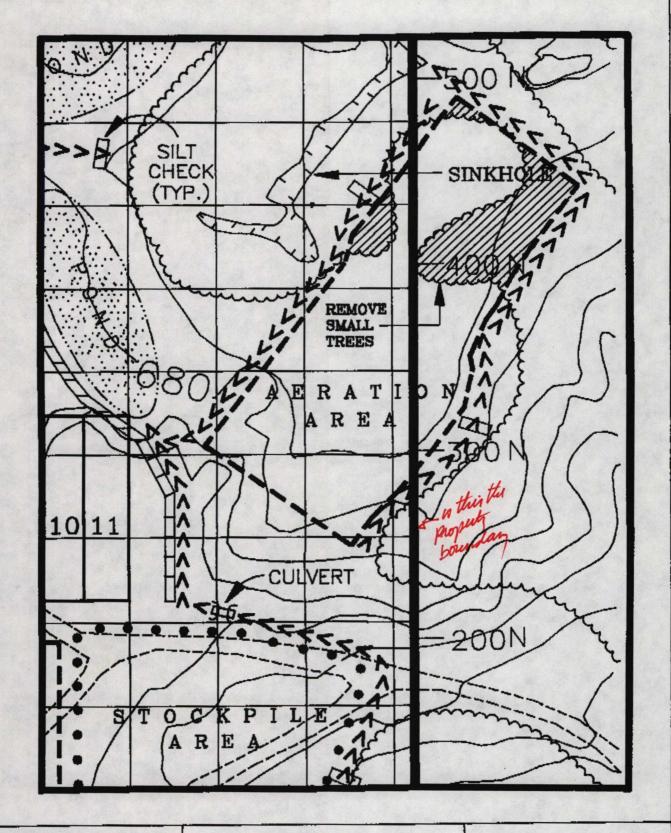
Thank you,



attachment

10/16/92 TELEPHONE CONVERGATION WITH JIM KNAUSS TO DISCUSS MY COMMENTS ON THIS MEMO/REQUEST:

- 1) THE NEW AREA GEING PROPOSED HAS VERY LITTLE SOIL LOVER HOW WILL THIS BE ADDRESSED
- 2) SINCE THE AREA HAS LITTLE SOIL COVER, HOW WILL THE DRAIMAGE DIEMES BE CONSTRUCTED? WILL THEY BY BERMS INSTEAD?
- 3) THEY NEED TO BE SURE THAT NONE OF THE TREES THAT WILL BE REMOVED ARE ENDAGENED, PROTECTED, ETC.



DATE: 10/14/92	FIGURE 1	HATCHER-SAYRE, INC.
DRAWN BY: PDH	DETAIL FROM ORGANIC CONTAMINANT REMEDIATION PLAN DEPICTING	LEXINGTON, XY
APPROVED BY: JDK	THIRD AERATION TREATMENT AREA	CLIENT NO.: 0064-001



## FAX TRANSMITTAL COVER SHEET

DATE:	10/15/2
то:	Destor Going
COMPANY:	USERA
FAX NO:	(404) 347-1695
FROM:	tim knows
TOTAL PAGE	s (INCLUDING COVER):
COMMENTS:	Destor - 8. Dona mores -
li)=	comed like to ass
Quot	her ones to speed
_cep	the process. We will
Chan	ce as the Dine Organice
Dosein	I Flow is Don aprove.
JOB NO:	8068-00/ Harles
	HATCHER-SAYRE, INC. OFFICE NO: (606) 271-0269

[21] From: BDickers 10/13/92 1:43PM (2157 bytes: 32 ln)

To: NYoung

cc YTaylor, MWilkes, SDurham

St ect: howe valley

Nestor, I spoke to Sharon Camp, the Deputy Project Officer for the TAT contract. I have confirmed that there will be no problem in you using TAT for oversight of the drum removal as long as we follow the following guidelines.

- 1) Sharon tells me that she or an OSC must do the paperwork to task TAT. The OSC manages the work in cooperation with you. When the paperwork is being done, please try not to call it "removal" work, so that we minimize the possibility that DOW may fight us later for the recovery of these costs. Instead, it would be great to somehow mark in the delivery order that the work to be done is "additional work" per the CD.
- 2) AS we discussed, the consent decree requires that the PRP submit a work plan to do any of this additional work. A technical document is not sufficient; the document must contain all of the components we would require for a real work plan. It must also be approved by EPA. I have jsut received the monthly report dated 10/5/92, and it refers the technical memorandum; please make sure that the PRPs responsibilities per the CD are made absolutely clear to the PRP. No work should be started without the work plan.
- 3) We probably need to do some community relations work to update the public as to the new developments. I don't anticipate this to be a big deal, maybe just a fact sheet released to the local press? By copy of this message, I am asking Suzanne Durham for her opinion. She may want to get the details from Nestor first.

Please let me know how this progresses. thanks, Brooke

[22] From: SDurham 10/13/92 3:21PM (448 bytes: 8 ln)

To: BDickers, NYoung cc HTaylor, MWilkes S ect: howe valley

----- Message Contents -----

Brooks,

Thanks for the info. Nestor and I have already discussed some sort of community relations for Howe Valley. We're thinking of a site update and maybe even an availability session in the community. We'll keep you informed.

Suzanne



## FAX TRANSMITTAL COVER SHEET

DATE: (0/8/92
TO: Nestor Going
COMPANY: (1.5. E FA Region IV
PAX NO: (404) 347-1695
FROM: Ein kususes
TOTAL PAGES (INCLUDING COVER):
a coper of the completed water
sound Budge Forting 1888
Mators). Also, The budgick
your information - I fee
JOB NO: 0064-00/
HATCHER-SAYRE, INC. OFFICE NO: (606) 271-0269 FAX NO: (606) 271-1204
Din County, tentuckey

#### 1351, 1352 & 1353 PILOT AREA (OIL LAYER ONLY) 9-16-92 5:00

WO #: 90378102

LAB #: A21170043-001.

MATRIX: OIL

DATE RECEIVED: DATE EXTRACTED: 9/18/92

9/17/92

DATE ANALYZED:

9/21/92

#### - - - - - - TCL VOLATILE ORGANICS - - - - - - -

#### MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS with their estimated concentrations

PARAMETER	RESULT	UNIT
Dimethylcyclohexane isomer Unknown alkane Unknown alkane	75,000 102,000 320,000	ug/kg ug/kg ug/kg
Unknown alkane Unknown alkane Trimethylbensene isomer	360,000 530,000 360,000	ug/kg ug/kg ug/kg

#### OTHER COMPOUNDS

Sec.

REBULT UNIT **CARAMETER** None

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PAGE 1

			REPORTING		
PARAMETER		RESULT	LIMIT	UNIT	METHOD
1374-1378 PIT WATER	9-25-92 7:00				
TARGET COMPOUND LI	ST - 3/90 - PE	ST/PCB			
alpha-BHC		ND	6	ug/L	SW846 8080
beta-BHC		ND	5	ug/L	SW846 8080
delta-BHC		ND	5	ug/L	BN846 8080
gamma-BHC (Lin	dane)	ND	5	ug/L	SW848 8080
Heptachlor		ND	5	ug/L	SW846 8080
Aldrin		ND	5	ug/L	8W846 8080
Heptachlor epo	xide	ND	5	ug/L	SW848 8080
Endosulfan I		ND	5	ug/L	SW846 8080
Dieldrin		ND	10	ug/L	SW846 8080
4,4'-DDE		ND	10	ug/L	SW846 8080
Endrin		ND	10	ug/L	SW848 8080
Endosulfan II		ND	10	ug/L	SW846 8080
4.4'-DDD		ND	10	ug/L	SW846 8080
Endosulfan sul	fate	ND	10	ug/L	SW846 8080
4,4'-DDT		ND	10	ug/L	SW846 8080
Methoxychlor		ND	50	ug/L	3W846 8080
Endrin ketone		ND	10	ug/L	SW846 8080
Endrin aldehyd		ND	10	ug/L	SW846 8080
alpha-Chlordan		ND	50	ug/L	BW846 8080
gamma-Chlordan		ND	50	ug/L	SW846 8080
Toxaphene		ND	250	ug/L	SW846 8080
			50		9W846 8080
Aroclor-1016		ND	The state of the s	ug/L	
Aroclor-1221		ND	50	ug/L	SW846 8080
Aroclor-1232		ND	50	ug/L	SW846 8080
Aroclor-1242		ND	50	ug/L	8W846 8080
Aroclor-1248		ND	50	ug/L	SW846 8080
Aroclor-1254		ND	100	ug/L	SW846 8080
Aroclor-1260		ND	100	ug/L	SW846 8080
TCL Volatile Organ	ics				
Chloromethane		ND	6,200	ug/L	SW846 8240
Bromomethane		ND	6,200	ug/L	8W846 8240
Vinyl chloride		ND	6,200	ug/L	SW846 8240
Chloroethane		ND	6,200	ug/L	SW846 8240
Methylene chic	ride	ND	3,100	ug/L	SW846 8240
Acetone		9,400 J	31,000	ug/L	8W846 8240
Carbon disulfi	de	ND	3,100	ug/L	SW846 8240
1.1-Dichloroet		ND.	3,100	ug/L	SW846 8240
1,1-Dichlorost		2,600 J	3,100	ug/L	SW848 8240
1,2-Dichlorest		19,000	3,100	ug/L	SW846 8240
Chloroform		1,800 J	3,100	ug/L	SW846 8240
1,2-Dichloroet	hane	ND	3,100	ug/L	SW846 8240
Tim proutotoe	,,,uate		4,200	MB1 M	01010 0010

A21280013 HATCHER SAYRE HOWE-VALLEY

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	PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD
1374-1	378 PIT WATER 9-25-92 7:00				
TCL	Volatile Organics				
	2-Butanone	2,700 J	31,000	ug/L	SW846 8240
	1,1,1-Trichloroethane	41,000	3,100	ug/L	BW846 8240
	Carbon tetrachloride	ND	3,100	ug/L	SW846 8240
	Browodichloromethane	ND	3,100	ug/L	SW846 8240
	1,2-Dichloropropane	ND	3,100	ug/L	SW846 8240
	cis-1,3-Dichloropropene	ND	3,100	ug/L	SW846 8240
	Trichloroethene	6,100	3,100	ug/L	SW846 8240
	Dibromochloromethane	ND	3,100	ug/L	SW846 8240
	1,1,2-Trichloroethane	ND	3,100	ug/L	SW846 8240
	Benzene	ND	3,100	ug/L	SW846 8240
	trans-1,3-Dichloropropene	ND	3,100	ug/L	SW846 8240
	Bromoform	ND	3,100	ug/L	5W846 8240
	4-Methyl-2-pentanone	15,000 J	31,000	ug/L	8W846 8240
	2-Hexanone	ND	31,000	ug/L	8W846 8240
	Tetrachloroethene	95,000	3,100	ug/L	8W846 8240
	Toluene	2,600 J	3,100	ug/L	SW846 8240
	1,1,2,2-Tetrachloroethane	ND	3,100	ug/L	SW846 8240
	Chlorobenzene	ND	3,100	ug/L	5W846 8240
	Ethylbenzene	ND	3,100	ug/L	SW846 8240
	Styrene	ND	3,100	ug/L	SW846 8240
	Xylenes, Total	7,100	3,100	ug/L	SW846 8240
TCL	Semivolatile Organics				
	Acenaphthene	ND	3,000	ug/L	SW846 8270
	Acenaphthylene	ND	3,000	ug/L	SW846 8270
	Anthracene	ND	3,000	ug/L	SW846 8270
	Benzo(a)anthracene	ND	3,000	ug/L	SWB46 8270
	Benso(b)fluoranthene	ND	3,000	ug/L	SW846 8270
	Benzo(k)fluoranthene	ND	3,000	ug/L	SW846 8270
	Benzo(ghi)perylene	ND	3,000	ug/L	BW846 8270
	Benzo(a)pyrene	ND	3,000	ug/L	SW846 8270
	Bis(2-chloroethoxy)methane	ND	3,000	ug/L	SW846 8270
	Bis(2-chloroethyl)ether	ND	3,000	ug/L	SW848 8270
	2,2'-oxybis(1-Chloropropane)	ND	3,000	ug/L	SW846 8270
	Bis(2-ethylhexyl)phthalate	ND	3,000	ug/L	SW846 8270
	4-Bromophenyl phenyl ether	ND	3,000	ug/L	SW846 8270
	Butyl benzyl phthalate	ND	3,000	ug/L	SW846 8270
	Carbagole	ND	3,000	ug/L	SW846 8270
	4-Chloroaniline	ND	3,000	ug/L	SW846 8270
	2-Chloronaphthalene	ND	3,000	ug/L	SW846 8270
	4-Chlorophenyl phenyl ether	ND	3,000	ug/L	SW846 8270
	Chrysene	ND	3,000		SW846 8270
	VIII V =0110	ND.	0,000	ug/L	07070 52/0

\*- elevated detection limits due to Tic's.
- tico are hydroconbonticos

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	PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD
13	74-1378 PIT WATER 9-25-92 7:00				
-#	TCL Semivolatile Organics				
"	Dibenzo(a,h)anthracene	ND	3,000	ug/L	SW846 8270
	Dibensofuran	ND	3,000	ug/L	8W846 8270
	Di-n-butyl phthalate	ND	3,000	ug/L	SW846 8270
	1,2-Dichlorobenzene	ND	3,000	ug/L	SW846 8270
	1,3-Dichlorobenzene	ND	3,000	ug/L	SW846 8270
	1,4-Dichlorobensene	ND	3,000	ug/L	8W846 8270
	3,3'-Dichlorobenzidine	ND	6,000	ug/L	8W846 8270
	Diethyl phthalate	ND	3,000	ug/L	SW846 8270
	Dimethyl phthalate	ND	3,000	ug/L	8W846 8270
	2,4-Dinitrotoluene	ND	3,000	ug/L	\$W846 8270
	2,6-Dinitrotoluene	ND	3,000	ug/L	9W846 8270
	Di-n-octyl phthalate	ND	3,000	us/L	8W846 8270
	Fluoranthene	ND	3,000	ug/L	SWB46 8270
	Fluorene	ND	3,000	ug/L	SW846 8270
	Hexachlorobensene	ND	3,000	ug/L	SW846 827D
	Hexachlorobutadiene	ND	3,000	ug/L	SW846 8270
	Hexachlorocyclopentadiene	ND	3,000	ug/L	SW846 8270
	Hexachloroethane	ND	3,000	ug/L	SW846 8270
	Indeno(1,2,3-cd)pyrene	ND	3,000	ug/L	SW846 8270
	Isophorone	ND	3,000	ug/L	SW846 8270
	2-Methylnaphthalene	ND	3,000	ug/L	SW846 8270
	Naphthalene	ND	3.000	ug/L	SW846 8270
	Nitrobensene	ND	3,000	ug/L	BW846 8270
	2-Nitroaniline	ND	15,000	ug/L	BW846 8270
	3-Nitroaniline	ND	15,000	ug/L	8W846 8270
	4-Nitroaniline	ND	15,000	ug/L	BW846 8270
	N-Nitrosodiphenylamine	ND	3,000	ug/L	8W846 8270
	N-Nitrosodi-n-propylamine	ND	3,000	ug/L	SW846 8270
	Phenanthrene	ND	3,000	ug/L	8W846 8270
	Pyrene	ND	3,000	ug/L	SW846 8270
	1,2,4-Trichlorobenzene	ND	3,000	ug/L	SW846 8270
	4-Chloro-3-methylphenol	ND	3,000	ug/L	SW846 8270
	2-Chlorophenol	ND	3,000	ug/L	SW846 8270
	2,4-Dichlorophenol	ND	3,000	ug/L	SW846 8270
	2,4-Dimethylphenol	ND	3,000	ug/L	8W846 8270
	2,4-Dinitrophenol	ND	15,000	ug/L	SW846 8270
	4,6-Dinitro-	ND	15,000	ug/L	SW846 8270
	2-methylphenol	170s. 1 10			5,550 0210
	2-Methylphenol	ND	3,000	ug/L	SW846 8270
	4-Methylphenol	ND	3,000	ug/L	SW846 8270
	2-Nitrophenol	ND	3,000	ug/L	SW846 8270
			0,500	2010	01010 0210

- elevated detection limits du 40 hydroconts

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PAGE

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHO	2
374-1378 PIT WATER 9-25-9	92 7:00				
TCL Semivolatile Organic					
4-Nitrophenol	ND	15,000	ug/L	SW848	827
Pentachlorophenol	ND	15,000	ug/L	SW846	827
Phenol	ND	3,000	ug/L	8W846	ALLESS STORY
2,4,5-Trichloropheno		3,000	ug/L	SW846	
2,4,6-Trichloropheno		3,000	ug/L	SW846	
TAL Metals	(				
Silver	ND	0.01	mg/L	8W846	601
Aluminum	9.4	0.2	mg/L	SW846	
Barium	0.15	0,01	mg/L	SW846	
Beryllium	ND	0.005	mg/L	SW846	A Parker In Land
Calcium	150	5.0	mg/L	SW846	100000000000000000000000000000000000000
Cadmium	MD	0.01	mg/L	SW846	
Cobalt	ND	0.05	mg/L	BW848	
Chronium	0.02	0.02	ng/L	SW846	-
	0.03	0.01		SW846	and the same
Copper			mg/L		75 75 75 75
Iron Potassium	17	0.05	mg/L	SW846	
	D	5.0	mg/L	BW846	
Magnesium	5.2	5.0	mg/L	8W846	
Manganese	10	0.01	mg/L	5W846	
Sodium	5.5	5.0	mg/L	BW846	- C.
Nickel	ND	0.04	mg/L	SW846	1200000
Lead	ND	0.1	mg/L	SW846	
Antimony	ND	0.3	mg/L	SW846	
Thallium	ND	0.5	mg/L	SW846	
Arsenio	0.02	0.005	mg/L	SW846	
Meroury	0.0008	0.0002	mg/L	8W846	
Selenium	*ND	0.01	mg/L	8W846	601
Vanadium	ND	0.05	mg/L	8W846	601
Zinc	0.39	0.05	mg/L	8W846	601
Inorganic Analysis					
Cyanide, Total	ND	0.005	mg/L	SW846	901
Cyanide, Amenable	ND	0.005	mg/L	BW846	901
379-1383 TRIP BLANK 9-25-	-92				
TARGET COMPOUND LIST - S	3/90 - PEST/POB				
alpha-BHC	ND	0.05	ug/L	BW846	808
beta-BHC	ND	0.08	ug/L	8W846	
delta-BHC	ND	0.05	ug/L	SW846	
gamma-BHC (Lindane)	ND	0.05	ug/L	SW846	V 10 10 10 10 10 10 10 10 10 10 10 10 10
		UIUU	ME/U		uuc

A2I280013 HATCHER SAYRE HOWE-VALLEY

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PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD
1379-1383 TRIP BLAFK 9-25-92				
TARGET COMPOUND LIST - 3/90 -	PEST/PCB			
Aldrin	ND	0.05	ug/L	BW846 8080
Heptachlor epoxide	ND	0.05	ug/L	8W846 8080
Endosulfan I	ND	0.05	ug/L	SW846 8080
Dieldrin	ND	0.1	ug/L	SW846 8080
4,4'-DDE	ND	0.1	ug/L	BW848 8080
Endrin	ND	0.1	ug/L	BW846 8080
Endosulfan II	ND	0.1	ug/L	8W846 8080
4,4°-DDD	ND	0.1	ug/L	9W848 8080
Endosulfan aulfate	ND	0.1	ug/L	BW846 8080
4,4'-DDT	ND	0,1	ug/L	SW846 8080
Methoxychlor	ND	0.5	ug/L	88845 8080
Endrin ketone	ND	0.1	ug/L	8W846 B080
Endrin aldehyde	ND	0.1	ug/L	SWB46 8080
alpha-Chlordane	MD.	0.5	ug/L	8W846 8080
gamma-Chlordane	ND	0.5	ug/L	SW846 8080
Toxaphene	ND	1	ug/L	5W846 8080
Aroclor-1016	ND	Ô.5	ug/L	8W846 8080
Aroclor-1221	ND	0.5	ug/L	8W846 B0B0
Aroclor-1232	ND	0.5	ug/L	5W848 8080
Aroolor-1242	ND	0.5	ug/L	5W846 8080
Aroclor-1248	ND	0.5	ug/L	8W846 8080
Aroclor-1254	ND ND	1	ug/L	SW845 8080
Aroclor-1254 Aroclor-1260	ND	i	ug/L	58846 8080
TCL Volatile Organics	NP	1	ng/ D	54040 5050
Chloromethane	ND	10	11 <i>m</i> /T	SW846 8240
Bromomethane	ND	10	ug/L ug/L	SV846 8240
		10		BW846 8240
Vinyl chloride Chloroethane	ND	10	ug/L	57846 8240
	ND		ug/L	
Methylene chloride	ND	5	ug/L	8W846 8240
Acetone	ND	50	ug/L	8W846 8240
Carbon disulfide	ND	5	ug/L	SW846 8240
1,1-Dichloroethene	ND	5	ug/L	5W848 8240
1,1-Dichloroethane	ND	5	ug/L	BW846 8240
1,2-Dichloroethene, Total		5	ug/L	5W846 8240
Chloroform	ЙD	5	us/L	BWB46 8240
1,2-Dichloroethane	NĎ	5	ug/L	8W846 8240
2-Butanone	ND	50	ug/L	8W846 8240
1,1,1-Trichloroethane	ND	5	ug/L	BW846 B240
Carbon tetrachloride	ND	<b>5</b> 5 5	ug/L	84846 8240
Browodichloromethane	ND	5	ug/L	8W846 8240
1,2-Dichloropropane	ND	5	ug/L	3W846 824D

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Page

	PARAMETER	result	REPORTING LIMIT	UNIT	<u>METHOD</u>
1379-13	383 TRIP BLANK 9-25-92				
TCL	Volatile Organics				
	cis-1,3-Dichloropropene	ND	6	ug/L	8W846 8240
	Trichloroethene	ND	5	ug/L	8¥846 8240
	Dibromochloromethane	ND	5	ug/L	9W846 8240
	1,1,2-Trichloroethane Bensene	ND ND	5	ug/L	6W846 8240
	trans-1,3-Dichloropropene	ND ND	5 5	ug/L	BW846 8240
	Bremeform	ND	5 5	ug/L ug/L	8W846 8240 8W846 8240
	4-Methyl-2-pentanone	NED	50	ug/L	8W846 8240
	2-Hexanone	ND	50	ug/L	SW846 8240
	Tetrachloroethene	ND	5	ug/L	8W846 8240
	Toluene	ND	5	ug/L	SW846 8240
	1,1,2,2-Tetrachloroethane	ND	5	ug/L	8W846 8240
	Chlorobensene	D	5	ug/L	SW846 8240
	Ethylbenzene	ND	δ	ug/L	SW846 8240
	Styrene	ND	5	ug/L	8WB48 8240
	Xylenes, Total	ND	5	u <b>g/L</b>	5WB46 <b>B24</b> 0
TCL	Semivolatile Organics	-15-	4.5	. 44	
	Acenaphthene	ND	10	ug/L	5W846 6270
	Acenaphthylene Anthracene	ND ND	10	ug/L	8W846 8270
	Benzo(a)anthracene	ND ND	10 10	ug/L	8W846 8270 5W846 8270
	Benzo(b)fluoranthene	ND ND	10	ug/L ug/L	SW846 8270
	Benso(k)fluoranthene	ND	10	ug/L	SW846 8270
	Benzo(ghi)perylene	ND	10	ug/L	5W846 8270
	Benzo(a)pyrene	ND	10	ug/L	5W846 8270
	Bis(2-chloroethoxy)methane	ND	10	ug/L	BW846 8270
	Bis(2-chloroethyl)ether	ND	10	ug/L	SW846 8270
	2,2'-oxybis(1-Chloropropane)	ND	10	ug/L	8W848 8270
	Bis(2-ethylhexyl)phthalate	ND	10	ug/L	BW846 8270
	4-Bromophenyl phenyl ether	סא	10	ug/L	8W846 8270
	Butyl benzyl phthalate	ND	10	ug/L	84846 8270
	Carbazole	ND	10	ug/L	8W846 8270
	4-Chloroaniline	ND	10	ug/L	SW846 8270
	2-Chloronaphthalene	ND	10	ug/L	8W846 8270
	4-Chlorophenyl phenyl ether	ND	10	ug/L	8W846 B270
	Chrysene	ND	10	ug/L	SW846 8270
	Dibenso(a, h) anthracene	ND	10	ug/L	BW846 8270
	Dibenzofuran	ND	10	ug/L	SW846 8270
	Di-n-butyl phthalate 1,2-Dichlorobensene	ND	10 10	ug/L	9W946 8270
	1,3-Dichlorobenzene	ND ND	10 10	ug/L	5W846 8270
	T   A_NTOUTOLOGAUPBUS	M	10	ug/L	5W846 8270

A2I280013 HATCHER SAYRE HOWE-VALUEY

PAGE

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD
1379-1383 TRIP BLANK 9-25-92				
TCL Semivolatile Organica				
1,4-Dichlorobenzene	ND	10	ug/L	SW846 827D
3,3'-Dichlorobenzidine	ND	20	ug/L	SW846 8270
Diethyl phthalate	ND	10	ug/L	SW846 8270
Dimethyl phthalate	ND	10	ug/L	SW846 8270
2,4-Dinitrotoluene	ND	10	ug/L	9W848 8270
2,8-Dinitrotoluene	ND	10	ug/L	5W846 8270
Di-n-octyl phthalate	ND	10	ug/L	SW846 8270 SW846 8270
Fluoranthene Fluorane	מא	10 10	ug/L	5W846 8270
Hexachlorobensene	nd Nd	10	ug/L ug/L	SW846 8270
Hexachlorobutadiene	ND	10	ug/L	8W846 8270
Hexachlorocyclopentadiene	ND	10	ug/L	SW846 8270
Hexachloroethane	תא מא	10	ug/L	SW846 8270
Indeno(1,2,3-od)pyrene	ND	10	ug/L	SW846 8270
Isophorone	ND	10	ug/L	8W846 8270
2-Methylnaphthalene	ND	10	ug/L	8W846 8270
Naphthalene	ND	10	ug/L	5W846 8270
Nitrobenzene	ND	10	ug/L	BW846 8270
2-Nitroaniline	ND	60	ug/L	SW846 8270
3-Nitrombiline	ND	50	ug/L	8W846 8270
4-Nitroamiline	ND	50	ug/L	8W846 8270
N-Nitrosodiphenylamine	ND	10	ug/L	SW846 8270
N-Nitromodi-n-propylamine	ND	10	ug/L	8W846 8270
Phonanthrene	ИD	10	ug/L	BWB46 8270
Pyrene	nd	10	ug/L	BW846 8270
1,2,4-Trichlorobenzene	ND	10	ug/L	SW846 8270
4-Chloro-3-methylphenol	ND	10	ug/L	8W846 8270
2-Chlorophenol	ND	10	ug/L	BWB46 8270
2,4-Dichlorophenol	nd	10	ug/L	SW846 8270
2,4-Dimethylphenol	ND	10	u <b>g/L</b>	SW846 8270
2,4-Dinitrophenol	MD	50	ug/L	BW846 8270
4,6-Dinitro-	ND	50	ug/L	8W846 8270
2-methylpheno1	utn	••	17	6W044 0050
2-Methylphenol	ND ND	10	ug/L	BW846 8270
4-Nethylphenol	ND	10	ug/L	8W846 8270 SW846 8270
2-Nitrophenol	ND.	10	ug/L	SW846 8270
4-Nitrophenol	ND	50 50	ug/L	8W848 8270
Pentachlorophenol Phenol	ND	10	ug/L	8W846 8270
2,4,5-Trichlorophenol	ND ND	10	ug/L	SW846 8270
2,4,6-Trichlorophenol	ND ND	10 10	ug/L	SW846 8270
21410-1110Hotobusuot	ND	YA.	ug/L	04040 041U

A21280013 HATCHER SAYRE, HOWE-VALLEY

PAGE

PARAMETER	RESULT	reporting <u>Limit</u>	UNIT	метнор
1379-1883 TRIP BLANK 9-25-92	•			
TCL Semivolatile Organics				
TAL Metals (				
Silver	D	0.01	mg/L	9W846 6010
Aluminum	ND	0.2	mg/L	SW846 6010
Barium	ND	0.01	mg/L	8W846 6D10
Beryllium	ND	0.005	mg/L	8W846 6010
Calcium	ND	5.0	mg/l	8W846 8010
Cadmium	ND	0.01	mg/L	8W846 6010
Cobalt	ND	0.05	mg/L	8W846 6010
Chronium	ND	0.02	mg/L	SW846 6010
Copper	ND	0.01	ng/L	SW846 6010
Iron	ND	0.05	mg/L	5W846 6010
Potassium	מא	5.0	mg/L	3W846 6010
Magnesium	ND	5.0	mg/L	8W846 6010
Manganore	ND	0.01	mg/L	8W846 6010
\$odium	ND	5.0	mg/L	8W846 6010
Nickel	ND	0.04	mg/L	SWB46 6010
Lead	ND	0.1	mg/L	SW846 6010
Antimony	ND	0.3	mg/L	8W846 8010
Thallium	ND	0.5	mg/L	8W846 6010
Arsenic	מא	0.005	mg/L	8W846 6010
Mercury	ND	0.0002	mg/L	8W846 6010
Selenium	ND	0.005	mg/L	8W846 6010
Vanadium	ND	0.05	mg/L	BW848 6010
Zino	ND	0.05	ng/L	8W846 6010
Inorganic Analysis	•••			2
Cyanide, Total	ND	0.005	mg/L	SW846 9010
Cyanide, Amenable	ND	0.005	mg/L	SW846 9010



#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

OCT 7 1992

#### MEMORANDUM

Review of the Treatability Study Final Report for the Howe Valley Landfill Site, Kentucky SUBJECT:

Ken Skahn, RD/RA Coordinator Kenneth Skehn FROM:

OERR/HSCD/DCMB (5203G)

TO: Nestor Young, RPM

Region 4/NSRB/Kentucky-Tennessee Section

I have reviewed the subject final report as requested. find that the report is acceptable as is and, thus, have no suggestions for improvement.

If you have any questions, or if I can be of further assistance, please call me at (703) 603-8801.

#### FACSIMILE COVER SHEET

Transmitted from:

# EPA U.S. Environmental Protection Agency

Office of Emergency and Remedial Response Hazardous Site Control Division (5203G) Washington, D.C. 20460

To: Nestor Young  Region/Lab/Firm: Region 4/NSRB / (TN-KY Sect)  Fax #: (404) 347 - 1695 Phone #: (404) 347 - 7791  FROM: Ken Skahn  Phone #: (703) \$ 603 - 8801  Comments:	Date: 10/0	7/92	Pages Transmitted
Fax #: (404) 347 - 1695 Phone #: (404) 347 - 779/  FROM: Ken Skahn  Phone #: (703) \$ 603 - 8801	To: Nes	tor Young	, , , , , , , , , , , , , , , , , , ,
PROM: Ken Skahn  Phone #: (703) \$ 603 - 8801	Region/Lab/E	Nrm: Reg	ion 4/NSRB / (TN-KY Sect)
Phone #: (703) \$ 603 - 8801	Fax #: (404) 3	47 - 1695	Phone #: (404) 347 - 7791
	FROM:	Ken Skal	hn
Comments:	Phone #: (703)	) <b>€</b> 603 - 8801	
	Comments:		
	<u> </u>		

Office of Emergency and Remedial Response

Hazardous Site Control Division

(703)603-9100

Crystal Gateway, 14th floor

Phone: (703)603-8800

Fax:



### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## REGION IV

345 COURTLAND STREET NE ATLANTA, GEORGIA 30365

October 6, 1992

Mr. Ralph P. McKeen, P.E. Work Assignment Manager Roy F. Weston, Inc. 6021 Live Oak Parkway Norcross, Georgia 30093

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Mr. McKeen:

Enclosed for your file are the following:

1. Letter to James D. Knauss, October 2, 1992

2. Approved Final Inorganic Design Plan, August 21, 1992

3. Pilot Treatability Study Work Plan, August 21, 1992

4. Analytical results for the inorganic soil confirmatory sampling

Please review the analytical results and advise me of any comments you may have. Specifically, verify that all samples collected in the field are reported accurately.

I have also enclosed two documents for your review and comment. They are, Technical Memorandum (regarding Discovery and Handling of "Unknown Material") and Intermediate/Prefinal Organic Design Plan. Please submit review comments on both documents by October 30, 1992.

As always, please call me if you have any questions.

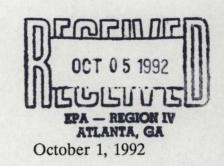
Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch





Mr. Nestor Young Remedial Project Manager U.S. Environmental Protection Agency, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

WESTON W.O. No. 04400-017-091

RE: Drum Removal Plan Review Work Assignment No. 17-4XN8

Howe Valley Landfill

Howe Valley, Hardin County, Kentucky

Contract No. 68-W9-0057

Document Control No. 4400-17-ACGP

Amire Godfrey, US EPA Region IV

Dear Mr. Young:

KT-IMM OIN!

Roy F. Weston, Inc. (WESTON) has prepared the attached comments in response to the Technical Memorandum concerning the discovery of buried drums at the Howe Valley Landfill Site. The memorandum was prepared for Dow Corning by Hatcher-Sayre, Inc., and is dated September 23, 1992. WESTON received a copy of the document via facsimile on September 29, 1992. WESTON is providing Remedial Design/Remedial Action oversight and project assistance to the U.S. Environmental Protection Agency under EPA Contract No. 68-W-0057.

Please call me at (404) 448-0644 if you have any questions.

Sincerely,

ROY F. WESTON, INC.

Ralph P. McKeen, P.E.

Work Assignment Manager

RPM/cmf

cc: Annie Godfrey, US EPA, Region IV
Lester Lewis, US EPA, Region IV

Randy Ferguson, WESTON

CARRY MAR YOURS



#### **ATTACHMENT**

## Contract No. 68-W9-0057 Work Assignment No. 17-4XN8 Document Control No. 4400-17-ACGP

Two buried drums have already been discovered and anomalous readings from the geophysical surveys have indicated the potential presence of additional drums in the same vicinity. The Technical Memorandum describes the procedures for detecting, excavating, and disposing of any buried drums found on site. In general, the memorandum has included thorough procedures for the drum removal activities. One would expect this level of detail since Dow Corning and Hatcher-Sayre, Inc. have removed over 16,000 drums previously at this site. The following minor inconsistencies and recommendations from WESTON's review are presented herein.

#### 1. Page 3, Paragraph 1

This paragraph describes the procedure for investigating areas that exhibit anomalous EM-31D readings. It is recommended that the backhoe be equipped with an explosion proof shield for operator safety. This shield is specified in the sampling section on Page 5 and should be used for all stages of the drum removal.

#### 2. Page 4, Paragraph 1

The memorandum states that each drum will placed in a plastic lined staging area. WESTON recommends a soil berm be constructed around the staging area as a contingency for an unexpected rupture and spillage of drum contents. Also, plans should be made to cover the drums with plastic since it may take some time to complete disposal arrangements.

#### 3. Page 5, Waste Disposal Activities

This paragraph states that the drums will be shipped to a CERCLA-approved facility for disposal. CERCLA does not regulate disposal activities. This should be changed to a RCRA-approved facility.

#### 4. Page 7, Personnel Level of Protection

Health and safety procedures for overpacking and shipping of drums are described in this section. There is no level of personal protection specified for the excavation phase. WESTON recommends that the equipment operator and any technicians assisting in the investigation phase utilize Level B equipment.



#### 5. General

No mention is made of soils that may be contaminated as a result of leaking drums or drums ruptured when being excavated. Presumably these soils will be handled in a similar fashion as the drums; however, the disposition of any contaminated soils should be discussed.

#### 6. General

As discussed during our site visit on Tuesday, September 22, 1992, the EPA may want to consider utilization of the Technical Assistance Team (TAT) contract to provide oversight of Level B operations. Under the ARCS contract, WESTON is not equipped to perform direct Level B entries and would thus be limited to field observations from within the "Support Zone". However, the site layout does lend itself to favorable viewing of the entire site from the "Support Zone", particularly with field binoculars.

#### TECHNICAL MEMORANDUM

Date: October 5, 1992

To: Nestor Young, Remedial Project Manager U.S. EPA, Region IV

Atlanta, Georgia

From: James D. Knauss, Ph.D., Project Manager

Hatcher-Sayre, Inc. Lexington, Kentucky

Re: Howe Valley Landfill, Hardin County, Kentucky Discovery and Handling of "Unknown Material"

As previously reported to EPA, on September 15, 1992, while excavating Area 1 as specified in the Pilot Treatability Study, an unknown oily liquid appeared at depth on top of water in a solution feature common to karst bedrock. Two samples were collected and shipped to Wadsworth/Alert Laboratories for volatile and semi-volatile analyses (see attached). The analysis of the floating oily layer indicated the presence of several volatiles (1,1,1-TCA, PCE and xylenes) as well as several semivolatile compounds. The liquid layer below the oily layer contained only volatile compounds. These volatiles included 1,1,1-TCA, PCE, TCE, 1,2-DCE, 1,1-DCA, 1,1-DCE, acetone, chloroform, toluene and 2-butanone.

The attached three-dimensional diagram illustrates general karst features in the area of the unknown material. The material appears to be located in the deeper, solutioned limestone depressions. During precipitation events, the material in the upslope depressions appears to overflow to the more downslope depression areas. Currently, water has collected in the downslope edge of the excavation where it contains noticeable volatile organics.

Mr. Young October 5, 1992 Page 2

The immediate source of the water is not known at this time. It has been an extremely wet summer and a couple of relatively large rainfalls have occurred since the excavation was initiated. Therefore, it could be percolation of recent run-on to the excavation pit. In any event, Dow Corning has decided to dewater the depressions and pump the water into a "tank" with secondary containment for further characterization. Ultimate treatment and/or disposal options will be developed following characterization. accomplish the dewatering, To large, downgradient depression area will be deepened with a trackhoe bucket to allow the placement of an intrinsically-safe submersible The pumping will occur periodically, depending upon the accumulation of water in the depression.

Following the dewatering of the depressions, excavation will continue downslope of the top 8 feet or so of soil. This soil will be transferred to the aeration area for treatment as specified in the Remedial Action Plan. This "stripping" of the upper soil will reveal the solutioned features, i.e., prominences and depressions. The large depression areas will be utilized for additional characterization and for assessing the extent of contamination.

To assess whether there is any sludge or other solid material associated with the identified oily liquid, a device similar to a Shelby tube will be pushed into one of the large depressions until bedrock is encountered. Immediately following the recovery of the tube, the hole will be filled with bentonite pellets. The material within the tube will be examined to establish the presence of any associated solids. Two additional representative locations will be investigated in a similar manner.

Mr. Young October 5, 1992 Page 3

Subsequent to the solids investigation, large depressions emanating away from the currently known location of the material will be investigated by using a sampling tube or a stainless steel hand auger. Borings will be conducted to the depth required to discover contamination (based upon data from the solids investigation). Soil samples will be collected for headspace analyses utilizing the FID/PID meters. When the meters indicate that the extent of contamination has been established, confirmation soil samples will be collected and analyzed for PCE.

All activities associated with the unknown material will be in Level B, in accordance with our previously approved Health and Safety Plan. Following the further characterization described above, a remedial action plan will be prepared to address this source of contamination.

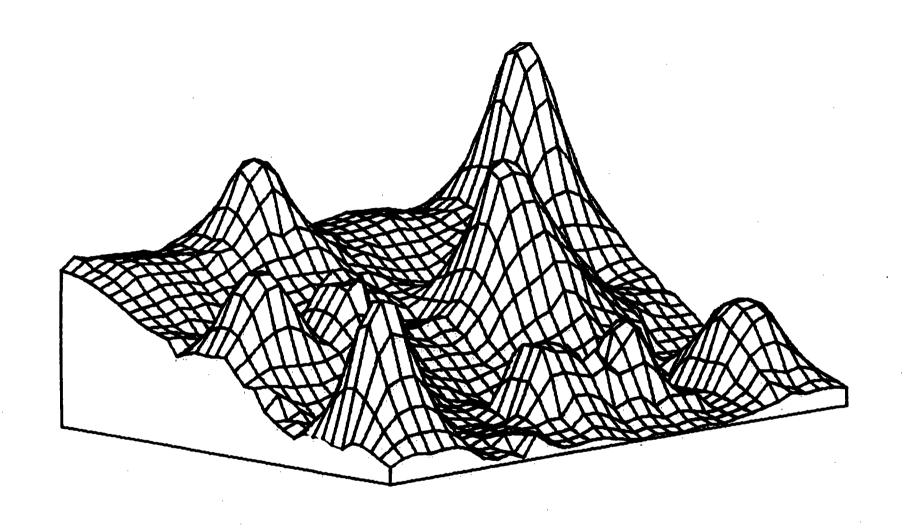


ILLUSTRATION OF GENERAL KARST FEATURES
HOWE VALLEY LANDFILL SITE



1351, 1352 & 1353 PILOT AREA (OIL LAYER ONLY) 9-16-92 5:00

WO #: 90378102

LAB #: A2I170043-001 DATE RECEIVED: 9/17/92

MATRIX: OIL

		LATILE ORGANI	ICS		
	RESULT	REPORTING		EXTRACTION-	QC
PARAMETER	(ug/kg)	<u>LIMIT</u>	METHOD	ANALYSIS DATE	BATCH
Chloromethane	ND	120,000	SW846 8240	9/18- 9/21/92	266035
Bromomethane	ND	120,000	SW846 8240	9/18- 9/21/92	266035
Vinyl chloride	ND	120,000	SW846 8240	9/18- 9/21/92	266035
Chloroethane	ND	120,000	SW846 8240	9/18- 9/21/92	266035
Methylene chloride	ND	62,000	SW846 8240	9/18- 9/21/92	266035
Acetone	ND	620,000	SW846 8240	9/18- 9/21/92	266035
Carbon disulfide	ND	62,000	SW846 8240	9/18- 9/21/92	266035
1,1-Dichloroethene	ND	62,000	SW846 8240	9/18- 9/21/92	266035
1,1-Dichloroethane	ND	62,000	SW846 8240	9/18- 9/21/92	266035
1,2-Dichloroethene, Total	ND	62,000	SW846 8240	9/18- 9/21/92	266035
hloroform	ND	62,000	SW846 8240	9/18- 9/21/92	266035
1,2-Dichloroethane	ND	62,000	SW846 8240	9/18- 9/21/92	266035
2-Butanone	ND	620,000	SW846 8240	9/18- 9/21/92	266035
1,1,1-Trichloroethane	170,000	62,000	SW846 8240	9/18- 9/21/92	266035
Carbon tetrachloride	ND	62,000	SW846 8240	9/18- 9/21/92	266035
Bromodichloromethane	ND	62,000	SW846 8240	9/18- 9/21/92	266035
1,2-Dichloropropane	ND	62,000	SW846 8240	9/18- 9/21/92	266035
cis-1,3-Dichloropropene	ND	62,000	SW846 8240	9/18- 9/21/92	266035
Trichloroethene	ND	62,000	SW846 8240	9/18- 9/21/92	266035
Dibromochloromethane	ND	62,000	SW846 8240	9/18- 9/21/92	266035
1,1,2-Trichloroethane	ND	62,000	SW846 8240	9/18- 9/21/92	266035
Benzene	ND	62,000	SW846 8240	9/18- 9/21/92	266035
trans-1,3-Dichloropropene	ND	62,000	SW846 8240	9/18- 9/21/92	266035
Bromoform	ND	62,000	SW846 8240	9/18- 9/21/92	266035
SURROGATE RECOVERY	<u>%</u>	ACCEPTABLI	E LIMITS		
1,2-Dichloroethane-d4	DIL	( 70 - )	-		
Toluene-d8	$\mathtt{DIL}$	( 81 - 3			
Bromofluorobenzene	DIL	( 74 - )	121)		

NOTE: AS RECEIVED

ND (NONE DETECTED)



1351, 1352 & 1353 PILOT AREA (OIL LAYER ONLY) 9-16-92 5:00

WO #: 90378101

LAB #: A2I170043-001 DATE RECEIVED: 9/17/92

MATRIX: OIL

		VOLATILE ORGA	ANICS		
PARAMETER	RESULT (ug/kg )	REPORTING LIMIT	METHOD	EXTRACTION- ANALYSIS DATE	QC <u>BATCH</u>
Acenaphthene Acenaphthylene Anthracene	9,600 J ND	80,000 80,000	SW846 8270 SW846 8270	9/18- 9/21/92 9/18- 9/21/92	262025 262025
Anthracene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
Benzo(a)anthracene Benzo(b)fluoranthene	ND ND	80,000 80,000	SW846 8270 SW846 8270	9/18- 9/21/92	262025 262025
Benzo(k)fluoranthene	ND	80,000	SW846 8270	9/18- 9/21/92 9/18- 9/21/92	262025
Benzo(ghi)perylene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
Benzo(a)pyrene Bis(2-chloroethoxy)methane	ND ND	80,000 80,000	SW846 8270 SW846 8270	9/18- 9/21/92 9/18- 9/21/92	262025 262025
Bis(2-chloroethyl)ether 2,2'-oxybis(1-Chloropropane)	ND ND	80,000 80,000	SW846 8270 SW846 8270	9/18- 9/21/92	262025
Bis(2-ethylhexyl)phthalate	ND	80,000	SW846 8270 SW846 8270	9/18- 9/21/92 9/18- 9/21/92	262025 262025
4-Bromophenyl phenyl ether Butyl benzyl phthalate	ND	80,000	SW846 8270	9/18- 9/21/92	262025
Carbazole	ND ND	80,000 80,000	SW846 8270 SW846 8270	9/18- 9/21/92 9/18- 9/21/92	262025 262025
4-Chloroaniline 2-Chloronaphthalene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
4-Chlorophenyl phenyl ether	ND ND	80,000 80,000	SW846 8270 SW846 8270	9/18- 9/21/92 9/18- 9/21/92	262025 262025
Chrysene Dibenzo(a,h)anthracene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
Dibenzofuran	ND ND	80,000 80,000	SW846 8270 SW846 8270	9/18- 9/21/92 9/18- 9/21/92	262025 262025
Di-n-butyl phthalate	ND	80,000	SW846 8270	9/18- 9/21/92	262025
1,2-Dichlorobenzene 1,3-Dichlorobenzene	ND ND	80,000 80,000	SW846 8270 SW846 8270	9/18- 9/21/92 9/18- 9/21/92	262025 262025
SURROGATE RECOVERY	<u>%</u>	ACCEPTABLE	LIMITS		
Nitrobenzene-d5 2-Fluorobiphenyl	DIL	( 23 - 1			
Z-riuorooipnenyi Terphenyl-d14	DIL DIL	( 30 - 1 ( 18 - 1	•		
2-Fluorophenol	DIL	( 25 - 1	21)		
Phenol-d5 2,4,6-Tribromophenol	DIL DIL	( 24 - 1 ( 19 - 1			
, , = =======phonox	~~~	, 10 1	!		

NOTE: AS RECEIVED

BLEVATED DETECTION LINITS DUE TO TICS.

J (DETECTED. BUT BELOW QUARTITATION LIMIT: ESTIMATED VALUE)

ND (NONE DETECTED)



1351, 1352 & 1353 PILOT AREA (OIL LAYER ONLY) 9-16-92 5:00

WO #: 90378102

LAB #: A2I170043-001 DATE RECEIVED: 9/17/92

MATRIX: OIL

PARAMETER	RESULT (ug/kg_)	OF 2 REPORTING LIMIT	METHOD	EXTRACTION- ANALYSIS DATE	QC BATCH
4-Methyl-2-pentanone	ND	620,000	SW846 8240	9/18- 9/21/92	266035
2-Hexanone	ND	620,000	SW846 8240	9/18- 9/21/92	266035
Tetrachloroethene	1,800,000	62,000	SW846 8240	9/18- 9/21/92	266035
Toluene	ND	62,000	SW846 8240	9/18- 9/21/92	266035
1,1,2,2-Tetrachloroethane	ND	62,000	SW846 8240	9/18- 9/21/92	266035
Chlorobenzene	ND	62,000	SW846 8240	9/18- 9/21/92	266035
Ethylbenzene	ND	62,000	SW846 8240	9/18- 9/21/92	266035
Styrene	ND	62,000	SW846 8240	9/18- 9/21/92	266035
Xylenes, Total	36,000 J	62,000	SW846 8240	9/18- 9/21/92	266035

SURROGATE RECOVERY	<u>%</u>	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	DIL	( 70 - 121) ( 81 - 117)
Toluene-d8 Bromofluorobenzene	DIL	(74 - 121)

NOTE: AS RECEIVED

ND (NONE DETECTED)

J (DETECTED, BUT BELOW QUANTITATION LIMIT; ESTIMATED VALUE)



1351, 1352 & 1353 PILOT AREA (OIL LAYER ONLY) 9-16-92 5:00

WO #: 90378101

LAB #: A2I170043-001 DATE RECEIVED: 9/17/92

MATRIX: OIL

PARAMETER	RESULT (ug/kg_)	REPORTINGLIMIT	<u>METHOD</u>	EXTRACTION- ANALYSIS DATE	QC <u>BATCH</u>
	145/15_/		MITTOD	MILETOTO DILLE	
1,4-Dichlorobenzene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
3,3'-Dichlorobenzidine	ND	160,000	SW846 8270	9/18- 9/21/92	262025
Diethyl phthalate	ND	80,000	SW846 8270	9/18- 9/21/92	262025
Dimethyl phthalate	ND	80,000	SW846 8270	9/18- 9/21/92	262025
2,4-Dinitrotoluene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
2,6-Dinitrotoluene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
Di-n-octyl phthalate	ND	80,000	SW846 8270	9/18- 9/21/92	262025
Fluoranthene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
Fluorene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
'texachlorobenzene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
exachlorobutadiene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
Hexachlorocyclopentadiene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
Hexachloroethane	ND	80,000	SW846 8270	9/18- 9/21/92	262025
Indeno(1,2,3-cd)pyrene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
Isophorone	ND	80,000	SW846 8270	9/18- 9/21/92	262025
2-Methylnaphthalene	14,000 J	80,000	SW846 8270	9/18- 9/21/92	262025
Naphthalene	ND.	80,000	SW846 8270	9/18- 9/21/92	262025
Nitrobenzene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
2-Nitroaniline	ND	400,000	SW846 8270	9/18- 9/21/92	262025
3-Nitroaniline	ND	400,000	SW846 8270	9/18- 9/21/92	262025
4-Nitroaniline	ND	400,000	SW846 8270	9/18- 9/21/92	262025
N-Nitrosodiphenylamine	ND	80,000	SW846 8270	9/18- 9/21/92	262025
N-Nitrosodi-n-propylamine	ND	80,000	SW846 8270	9/18- 9/21/92	262025
Phenanthrene	ND	80,000	SW846 8270	9/18- 9/21/92	262025
SURROGATE RECOVERY	<u>%</u>	ACCEPTABL	E LIMITS		
Nitrobenzene-d5	DIL	( 23 - )	120)		
2-Fluorobiphenyl	DIL	( 30 -			
Terphenyl-d14	DIL	( 18 -			
?-Fluorophenol	DIL	( 25 -			
henol-d5	DIL	( 24 -			
2,4,6-Tribromophenol	DIL	( 19 -	122)		

NOTE: AS RECEIVED ND (NORE DETECTED)

ELEVATED DETECTION LINITS DUE TO TICS.

(DETECTED, BUT BELOW QUARTITATION LIMIT: ESTIMATED VALUE)



1351, 1352 & 1353 PILOT AREA (OIL LAYER ONLY) 9-16-92 5:00

WO #: 90378101

LAB #: A2I170043-001 DATE RECEIVED: 9/17/92

MATRIX: OIL

	3	OP 4			
PARAMETER	RESULT (ug/kg_)	REPORTINGLIMIT	METHOD	EXTRACTION- ANALYSIS DATE	QC <u>BATCH</u>
Pyrene 1,2,4-Trichlorobenzene	9,600 J ND	80,000 80,000	SW846 8270 SW846 8270	9/18- 9/21/92 9/18- 9/21/92	262025 262025

SURROGATE RECOVERY	<u>%</u>	ACCEPTABLE LIMITS
Nitrobenzene-d5	DIL	( 23 - 120)
2-Fluorobiphenyl	DIL	( 30 - 115)
Terphenyl-d14	DIL	( 18 - 137)
2-Fluorophenol	DIL	( 25 - 121)
?henol-d5	DIL	( 24 - 113)
2.4.6-Tribromonhenol	DII.	(19 - 122)

HOTE: AS RECEIVED

ND (HORE DETECTS)

ELEVATED DETECTION LIMITS DUE TO TICS.

J (DETECTED. BUT BELOW QUARTITATION LIMIT: ESTIMATED VALUE)



1351, 1352 & 1353 PILOT AREA (OIL LAYER ONLY) 9-16-92 5:00

WO #: 90378101

Pentachlorophenol

2,4,5-Trichlorophenol

2,4,6-Trichlorophenol

Phenol

LAB #: A2I170043-001 DATE RECEIVED: 9/17/92

TCL SEMIVOLATILE ORGANICS -

MATRIX: OIL

4 OF ļ QC RESULT REPORTING EXTRACTION-<u>Parameter</u> (ug/kg) LIMIT **METHOD** ANALYSIS DATE **BATCH** 80,000 SW846 8270 9/18- 9/21/92 262025 4-Chloro-3-methylphenol ND 80,000 262025 2-Chlorophenol ND SW846 8270 9/18- 9/21/92 262025 2,4-Dichlorophenol 80,000 SW846 8270 9/18- 9/21/92 ND 262025 2,4-Dimethylphenol 80,000 SW846 8270 9/18- 9/21/92 ND 2,4-Dinitrophenol 400,000 SW846 8270 9/18- 9/21/92 262025 ND 262025 400,000 9/18- 9/21/92 4,6-Dinitro-SW846 8270 ND 2-methylphenol 2-Methylphenol 80,000 SW846 8270 9/18- 9/21/92 262025 ND 4-Methylphenol 80,000 SW846 8270 9/18- 9/21/92 262025 ND 262025 2-Nitrophenol 80,000 SW846 8270 9/18- 9/21/92 ND 262025 9/18- 9/21/92 .-Nitrophenol ND 400,000 SW846 8270

400,000

80,000

80,000

80,000

SW846 8270

SW846 8270

SW846 8270

SW846 8270

9/18- 9/21/92

9/18- 9/21/92

9/18- 9/21/92

9/18- 9/21/92

262025

262025

262025

262025

SURROGATE RECOVERY	<u><b>%</b></u>	ACCEPTABLE LIMITS
Nitrobenzene-d5	DIL	( 23 - 120)
2-Fluorobiphenyl	DIL	( 30 - 115)
Terphenyl-d14	DIL	( 18 - 137)
2-Fluorophenol	DIL	( 25 - 121)
Phenol-d5	DIL	( 24 - 113)
2,4,6-Tribromophenol	DIL	(19 - 122)

ND

ND

ND

ND

HOTE: AS RECEIVED

HD (HOBE DETECTED)



1351, 1352 & 1353 PILOT AREA (LIQUID LAYER ONLY) 9-16-92 5:00

WO #: 90379101

DATE RECEIVED: 9/17/92 LAB #: A2I170043-002

---- TCL VOLATILE ORGANICS ----

MATRIX: LIQUID

	1	OF 2			
	RESULT	REPORTING		EXTRACTION-	QC
<u>PARAMETER</u>	(ug/L )	LIMIT	METHOD	ANALYSIS DATE	BATCH
Chloromethane	ND	2,000	SW846 8240	9/21/92	266048
Bromomethane	ND	2,000	SW846 8240	9/21/92	266048
Vinyl chloride	ND	2,000	SW846 8240	9/21/92	266048
Chloroethane	ND	2,000	SW846 8240	9/21/92	266048
Methylene chloride	ND	1,000	SW846 8240	9/21/92	266048
Acetone	3,400 J	10,000	SW846 8240	9/21/92	266048
	•,•••	20,000		-,,	
Carbon disulfide	ND	1,000	SW846 8240	9/21/92	266048
1,1-Dichloroethene	1,400	1,000	SW846 8240	9/21/92	266048
1,1-Dichloroethane	1,600	1,000	SW846 8240	9/21/92	266048
1,1 210000000000000000000000000000000000	_,,	_,	20.20 02.10	0, 42, 62	
1,2-Dichloroethene, Total	24,000	1,000	SW846 8240	9/21/92	266048
hloroform	1,400	1,000	SW846 8240	9/21/92	266048
1,2-Dichloroethane	ND	1,000	SW846 8240	9/21/92	266048
		•			
2-Butanone	6,900 J	10,000	SW846 8240	9/21/92	266048
1,1,1-Trichloroethane	14,000	1,000	SW846 8240	9/21/92	266048
Carbon tetrachloride	ND	1,000	SW846 8240	9/21/92	266048
		- <b>,</b>		-,	
Bromodichloromethane	ND	1,000	SW846 8240	9/21/92	266048
1,2-Dichloropropane	ND	1,000	SW846 8240	9/21/92	266048
cis-1,3-Dichloropropene	ND	1,000	SW846 8240	9/21/92	266048
		_,	2.010 0010	5, 22, 52	
Trichloroethene	1,600	1,000	SW846 8240	9/21/92	266048
Dibromochloromethane	ND	1,000	SW846 8240	9/21/92	266048
1,1,2-Trichloroethane	ND	1,000	SW846 8240	9/21/92	266048
_, ,		-,	2.010 0210	-,,	2000.0
Benzene	ND	1,000	SW846 8240	9/21/92	266048
trans-1,3-Dichloropropene	ND	1,000	SW846 8240	9/21/92	266048
Bromoform	ND	1,000	SW846 8240	9/21/92	266048
		-,	2010 0210	-, -2, 0-	

SURROGATE RECOVERY	<u>%</u>	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	93 104 98	( 70 - 121) ( 81 - 117) ( 74 - 121)

NOTE: AS RECRIVED ND (NONE DETECTED)

<sup>(</sup>DETECTED, BUT BELOW QUANTITATION LIKIT; ESTIMATED VALUE)



1351, 1352 & 1353 PILOT AREA (LIQUID LAYER ONLY) 9-16-92 5:00

WO #: 90379101

LAB #: A2I170043-002 DATE RECEIVED: 9/17/92

MATRIX: LIQUID

and a second sec					
PARAMETER	2 RESULT (ug/L )	OF 2 REPORTING LIMIT	METHOD	EXTRACTION- ANALYSIS DATE	QC <u>BATCH</u>
4-Methyl-2-pentanone	ND	10,000	SW846 8240	9/21/92	266048
2-Hexanone	ND	10,000	SW846 8240	9/21/92	266048
Tetrachloroethene	4,800	1,000	SW846 8240	9/21/92	266048
Toluene 1,1,2,2-Tetrachloroethane Chlorobenzene	400 J	1,000	SW846 8240	9/21/92	266048
	ND	1,000	SW846 8240	9/21/92	266048
	ND	1,000	SW846 8240	9/21/92	266048
Ethylbenzene	ND	1,000	SW846 8240	9/21/92	266048
Styrene	ND	1,000	SW846 8240	9/21/92	266048
Xylenes, Total	ND	1,000	SW846 8240	9/21/92	266048

SURROGATE RECOVERY	<u>%</u>	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4 Toluene-d8	93 104	( 70 - 121) ( 81 - 117)
Bromofluorobenzene	98	(74 - 121)

NOTE: AS RECEIVED
ND (NONE DETECTED)

J (DETECTED, BUT BELOW QUANTITATION LIMIT; ESTIMATED VALUE)



1351, 1352 & 1353 PILOT AREA (LIQUID LAYER ONLY) 9-16-92 5:00

WO #: 90379104

LAB #: A2I170043-002 DATE RECEIVED: 9/17/92

MATRIX: LIQUID

- - - TCL SEMIVOLATILE ORGANICS - -1 OF ş RESULT REPORTING QC EXTRACTION-**PARAMETER** (ug/L) LIMIT METHOD ANALYSIS DATE **BATCH** Acenaphthene ND 200 SW846 8270 263001 9/19- 9/23/92 Acenaphthylene 200 263001 ND SW846 8270 9/19- 9/23/92 Anthracene 263001 ND 200 SW846 8270 9/19- 9/23/92 Benzo(a)anthracene ND 200 SW846 8270 9/19- 9/23/92 263001 Benzo(b) fluoranthene 9/19- 9/23/92 263001 ND 200 SW846 8270 Benzo(k)fluoranthene SW846 8270 9/19- 9/23/92 263001 ND 200 Benzo(ghi)perylene 200 SW846 8270 9/19- 9/23/92 263001 ND Benzo(a)pyrene SW846 8270 263001 ND 200 9/19- 9/23/92 Bis(2-chloroethoxy)methane SW846 8270 9/19- 9/23/92 263001 ND 200 Ris(2-chloroethyl)ether ND 200 SW846 8270 9/19- 9/23/92 263001 ,2'-oxybis(1-Chloropropane) ND 200 SW846 8270 9/19- 9/23/92 263001 Bis(2-ethylhexyl)phthalate ND 200 SW846 8270 263001 9/19- 9/23/92 4-Bromophenyl phenyl ether 200 263001 ND SW846 8270 9/19- 9/23/92 Butyl benzyl phthalate ND 200 SW846 8270 9/19- 9/23/92 263001 Carbazole ND 200 SW846 8270 9/19- 9/23/92 263001 4-Chloroaniline 263001 ND 200 SW846 8270 9/19- 9/23/92 2-Chloronaphthalene ND 200 SW846 8270 9/19- 9/23/92 263001 4-Chlorophenyl phenyl ether 263001 ND 200 SW846 8270 9/19- 9/23/92 Chrysene 263001 ND 200 SW846 8270 9/19- 9/23/92 Dibenzo(a,h)anthracene 9/19- 9/23/92 ND 200 SW846 8270 263001 Dibenzofuran 200 SW846 8270 9/19- 9/23/92 263001 ND Di-n-butyl phthalate 9/19- 9/23/92 263001 ND 200 SW846 8270 1,2-Dichlorobenzene 263001 ND 200 SW846 8270 9/19- 9/23/92 1,3-Dichlorobenzene 263001 ND 200 SW846 8270 9/19- 9/23/92 SURROGATE RECOVERY ACCEPTABLE LIMITS <u>%</u> Nitrobenzene-d5 (23 - 120)DIL 2-Fluorobiphenyl DIL (30 - 115)Terphenyl-d14 DIL (18 - 137)?-Fluorophenol DIL (25 - 121)

(24 - 113)

(19 - 122)

DIL

DIL

HOTE: AS RECRIVED

(HOME DETECTED)

2,4,6-Tribromophenol

henol-d5



1351, 1352 & 1353 PILOT AREA (LIQUID LAYER ONLY) 9-16-92 5:00

WO #: 90379104

LAB #: A2I170043-002 DATE RECEIVED: 9/17/92

MATRIX: LIQUID

- - TCL SEMIVOLATILE ORGANICS -2 OF 4 RESULT REPORTING QC. EXTRACTION-PARAMETER (ug/L) LIMIT METHOD ANALYSIS DATE BATCH 1,4-Dichlorobenzene ND 200 SW846 8270 9/19- 9/23/92 263001 3,3'-Dichlorobenzidine ND 440 SW846 8270 9/19- 9/23/92 263001 Diethyl phthalate ND 200 SW846 8270 9/19- 9/23/92 263001 Dimethyl phthalate ND 200 SW846 8270 9/19- 9/23/92 263001 2,4-Dinitrotoluene 200 ND SW846 8270 9/19- 9/23/92 263001 2,6-Dinitrotoluene 200 ND SW846 8270 9/19- 9/23/92 263001 Di-n-octyl phthalate 200 9/19- 9/23/92 263001 ND SW846 8270 Fluoranthene ND 200 SW846 8270 9/19- 9/23/92 263001 Fluorene ND 200 SW846 8270 9/19- 9/23/92 263001 Hexachlorobenzene ND 200 SW846 8270 9/19- 9/23/92 263001 lexachlorobutadiene ND 200 SW846 8270 9/19- 9/23/92 263001 Hexachlorocyclopentadiene ND 200 SW846 8270 9/19- 9/23/92 263001 Hexachloroethane 200 ND SW846 8270 9/19- 9/23/92 263001 Indeno(1,2,3-cd)pyrene ND 200 SW846 8270 9/19- 9/23/92 263001 Isophorone ND 200 SW846 8270 9/19- 9/23/92 263001 2-Methylnaphthalene ND 200 SW846 8270 9/19- 9/23/92 263001 Naphthalene 200 ND SW846 8270 9/19- 9/23/92 263001 Nitrobenzene ND 200 SW846 8270 9/19- 9/23/92 263001 2-Nitroaniline 263001 ND 9/19- 9/23/92 1,100 SW846 8270 3-Nitroaniline 9/19- 9/23/92 263001 ND 1,100 SW846 8270 4-Nitroaniline 263001 ND 1,100 SW846 8270 9/19- 9/23/92 N-Nitrosodiphenylamine 200 9/19- 9/23/92 263001 ND SW846 8270 N-Nitrosodi-n-propylamine 200 263001 ND SW846 8270 9/19- 9/23/92 Phenanthrene ND 200 SW846 8270 9/19- 9/23/92 263001 SURROGATE RECOVERY <u>%</u> ACCEPTABLE LIMITS Nitrobenzene-d5 DIL (23 - 120)2-Fluorobiphenyl DIL (30 - 115)Terphenyl-d14 (18 - 137)DIL 2-Fluorophenol DIL (25 - 121)Phenol-d5 DIL (24 - 113)2,4,6-Tribromophenol DIL (19 - 122)

HOTE: AS RECEIVED

HD (HOME DETECTED)



1351, 1352 & 1353 PILOT AREA (LIQUID LAYER ONLY) 9-16-92 5:00

WO #: 90379104

LAB #: A2I170043-002

DATE RECEIVED: 9/17/92

MATRIX: LIQUID

- - - - - - TCL SEMIVOLATILE ORGANICS - - - - - -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	<u>METHOD</u>	EXTRACTION- ANALYSIS DATE	QC <u>BATCH</u>
Pyrene	ND	200	SW846 8270	9/19- 9/23/92	263001
1,2,4-Trichlorobenzene	ND	200	SW846 8270	9/19- 9/23/92	263001

SURROGATE RECOVERY	<u>%</u>	ACCEPTABLE LIMITS
Nitrobenzene-d5	DIL	( 23 - 120)
2-Fluorobiphenyl	DIL	( 30 - 115)
Terphenyl-d14	DIL	( 18 - 137)
2-Fluorophenol	DIL	( 25 - 121)
henol-d5	DIL	( 24 - 113)
2.4.6-Tribromophenol	DIL	(19 - 122)

BOTE: AS RECEIVED



1351, 1352 & 1353 PILOT AREA (LIQUID LAYER ONLY) 9-16-92 5:00

WO #: 90379104

LAB #: A2I170043-002 DATE RECEIVED: 9/17/92

MATRIX: LIQUID

4 OF 4					
	RESULT	REPORTING		EXTRACTION-	QC
PARAMETER	(ug/L)	LIMIT	METHOD	ANALYSIS DATE	<u>BATCH</u>
4-Chloro-3-methylphenol	ND	200	SW846 8270	9/19- 9/23/92	263001
2-Chlorophenol	ND	200	SW846 8270	9/19- 9/23/92	263001
2,4-Dichlorophenol	ND	200	SW846 8270	9/19- 9/23/92	263001
2,4-Dimethylphenol	ND	200	SW846 8270	9/19- 9/23/92	263001
2,4-Dinitrophenol	ND	1,100	SW846 8270	9/19- 9/23/92	263001
4,6-Dinitro- 2-methylphenol	ND	1,100	SW846 8270	9/19- 9/23/92	263001
2-Methylphenol	ND	200	SW846 8270	9/19- 9/23/92	263001
4-Methylphenol	ND	200	SW846 8270	9/19- 9/23/92	263001
2-Nitrophenol	ND	200 .	SW846 8270	9/19- 9/23/92	263001
i-Nitrophenol	ND	1,100	SW846 8270	9/19- 9/23/92	263001
Pentachlorophenol	ND	1,100	SW846 8270	9/19- 9/23/92	263001
Phenol	ND	200	SW846 8270	9/19- 9/23/92	263001
2,4,5-Trichlorophenol	ND	200	SW846 8270	9/19- 9/23/92	263001
2,4,6-Trichlorophenol	ND	200	SW846 8270	9/19- 9/23/92	263001

SURROGATE RECOVERY	<u>%</u>	ACCEPTABLE LIMITS		
Nitrobenzene-d5	DIL	( 23 - 120)		
2-Fluorobiphenyl	DIL	( 30 - 115)		
Terphenyl-d14	DIL	( 18 - 137)		
2-Fluorophenol	DIL	( 25 - 121)		
Phenol-d5	DIL	( 24 - 113)		
2,4,6-Tribromophenol	DIL	( 19 - 122)		

NOTE: AS RECEIVED

NOTE: AS RECEIVED

(NONE DETECTED)

## FACSIMILE COVER SHEET

Superfund Technology Demonstration Division Technical Support Branch Cincinnati, Ohio 45268



	PHO
	Pages Transmitted 66
TO: Meriles	young 404-347-7791
LOCATION:	0 9
FAX NUMBER:	104-347-1648
FROM:	matter
	513-569-7624
COMMENTS:	
	. 2051 -752
	re is RREL-TSB reven
- Bench Sc	ale T.S. from Home Valley
- toulfill Si	te. If you have any
questions	of sleepe call me a Joan Colson
at 513-569-75	701
	Risk Reduction Engineering Laboratory Superfund Technology Demonstration Division Phone FTS 684-7519, (513) 569-7519
	FAX FTS 684-7676, (513) 569-7676

October 1992

# ENGINEERING DESIGN FORUM ASSISTANCE HOWE VALLEY SOILS SITE

Short Review of Bench-Scale Treatability Study Effect of Roto-Tilling on VOC Valatilization from Howe Valley Soils

by

Ari Selvakumar James P. Stumbar

Contract No. 88-C9-0033

Work Assignment 2-R008-72

Hugh E. Masters Project Officer

Michael Borst Task Leader Releases Control Branch

Joan Colson
Technical Project Monitor
Superfund Technology Demonstration Division
Office of Research and Development
U.S. Environmental Protection Agency
Cincinneti, OH 45268

### 1.0 **EXECUTIVE SUMMARY**

This report provides a short review and assessment of a bench-scale treatability study "Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils" at the Howe Valley Landfill Site, Hardin County, Kentucky conducted by the Dragun Corporation.

We conclude that the treatability study adequately simulated VOC volatilization from the contaminated Howe Valley Soils. We are in general agreement with the conclusions given in the treatability study report. However, the bench-scale study will only give qualitative information on the rate of volatilization in the site for the following reasons:

- Mixing of the soil in the bench-scale study will only qualitatively simulate the roto-tilling process.
- Soil temperature in the field will probably be different than in the bench-spale experiment.
- Contaminants in the field will have had adequate time to penetrate the micropores. This should slow the volatile release as compared to the bench-ecale study.

During the remediation, rate-tilling should not be performed on wet soil following a rain because of the tendency to form lumps. These lumps may impede the devolatilization process.

# 2.0 INTRODUCTION

The United States Environmental Protection Agency has selected soil aeration as the preferred technology for treating soil at the Howe Valley Landfill site, Hardin County, Kentucky. The soil will be excavated and placed next to their unsarthed trenches in a 1-foot high lift and roto-tilled to promote volatilization of the organics. The purpose of the bench-scale testing, discussed in the report [1] was to verify that soil aeration can meet the performance goals for the site. More specifically, to evaluate the ability of tetrachioroethene (PCE) to volatilize quickly from Howe Valley soil, and to verify that PCE concentrations in soil at the conclusion of soil treatment will be below the soil action level (<7.5 mg/kg).

# 3.0 REVIEW OF BENCH-SCALE TREATABILITY STUDY

# 3.1 General Evaluation of the Treetability Study

The bench-scale treatability study closely followed the test protocol developed by the Dragun Corporation for Dow Corning Corporation [2]. The treatability study was conducted according to a modified protocol which included the major comments of our 4/8/92 memo [3]. The results obtained from the study show that the soil aeration can achieve adequate VOC removal to achieve the site cleanup goal in a short time period. Most of the PCE in the soil volatilized within the first few hours of study. However, the bench-scale study will only give qualitative information on the rate of volatilization in the site because of the following factors:

- Mixing of the soil in the bench-scale study will only qualitatively simulate the roto-tilling process.
- Soil temperature in the field will probably be different than in the bench-scale experiment.
- Contaminants in the field will have had adequate time to penatrate the micropores. This
  should slow the volatile release as compared to the bench-scale study.

# 3.2 Comment on the Bench-Scale Study

Although the bench-scale study is well conducted, the following observations were noticed;

- The study departs from the test plan:
  - Make up water was not added during the study to keep the moisture content constant.
  - Moisture contents were 23% and 34% respectively instead of 5% and 40%.
  - The relative humidity in the chambers was greater than 90%. The experiments were unable to run at low humidity (<30%) levels.

These departures do not affect the main conclusions of the study.

- Soils from the high moisture content units formed sticky lumps during the mixing and the mixer did not function properly. Hence, they were mixed with hand. Similar behavior should be expected under full-scale field conditions. Hence, during the remediation, roto-tilling should not be performed on wet soil following a rain because lumping would tend to hinder devolatilization.
- Spiking does not permit allow diffusion processes that can occur in the soil to take place.
   Micropores may not have reached equilibrium concentrations.
- Moisture content of the soil is determined by oven drying at 80°C overnight. According to ASTM D2216-80 [4], it should be oven dried at 110±5°C overnight.

# 4.0 REFERENCES

- Dragun Corporation. 1992. Treatability Study for the Howe Valley Site Sench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils.
- 2. Dragun Corporation. 1992. Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils.
- 3. Stumbar, J.P. 1992. Engineering Design Forum Assistance: Short Review of Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils. Submitted to Superfund Technology Demonstration Division, Office of Research and Development, USEPA, Cincinnati, OH.
- 4. ASTM. 1980. Standard Method for Laboratory Determination of Water Content of Soil, Rock, and Soil. Aggregate Mixtures. ASTM D2216-80.

### TECHNICAL MEMORANDUM

Date: October 5, 1992

To: Nestor Young, Remedial Project Manager

U.S. EPA, Region IV Atlanta, Georgia

From: James D. Knauss, Ph.D., Project Manager

Hatcher-Sayre, Inc. Lexington, Kentucky

Re: Howe Valley Landfill, Hardin County, Kentucky Discovery and Handling of "Unknown Material"

As previously reported to EPA, on September 15, 1992, while excavating Area 1 as specified in the Pilot Treatability Study, an unknown oily liquid appeared at depth on top of water in a solution feature common to karst bedrock. Two samples were collected and shipped to Wadsworth/Alert Laboratories for volatile and semi-volatile analyses (see attached). The analysis of the floating oily layer indicated the presence of several volatiles (1,1,1-TCA, PCE and xylenes) as well as several semivolatile compounds. The liquid layer below the oily layer contained only volatile compounds. These volatiles included 1,1,1-TCA, PCE, TCE, 1,2-DCE, 1,1-DCA, 1,1-DCE, acetone, chloroform, toluene and 2-butanone.

The attached three-dimensional diagram illustrates general karst features in the area of the unknown material. The material appears to be located in the deeper, solutioned limestone depressions. During precipitation events, the material in the upslope depressions appears to overflow to the more downslope depression areas. Currently, water has collected in the downslope edge of the excavation where it contains noticeable volatile organics.

Mr. Young October 5, 1992 Page 2

The immediate source of the water is not known at this time. It has been an extremely wet summer and a couple of relatively large rainfalls have occurred since the excavation was initiated. Therefore, it could be percolation of recent run-on to the excavation pit. In any event, Dow Corning has decided to dewater the depressions and pump the water into a "tank" with secondary containment for further characterization. Ultimate treatment and/or disposal options will be developed following the characterization. accomplish the dewatering, To a downgradient depression area will be deepened with a trackhoe bucket to allow the placement of an intrinsically-safe submersible The pumping will occur periodically, depending upon the pump. accumulation of water in the depression.

Following the dewatering of the depressions, excavation will continue downslope of the top 8 feet or so of soil. This soil will be transferred to the aeration area for treatment as specified in the Remedial Action Plan. This "stripping" of the upper soil will reveal the solutioned features, i.e., prominences and depressions. The large depression areas will be utilized for additional characterization and for assessing the extent of contamination.

To assess whether there is any sludge or other solid material associated with the identified oily liquid, a device similar to a Shelby tube will be pushed into one of the large depressions until bedrock is encountered. Immediately following the recovery of the tube, the hole will be filled with bentonite pellets. The material within the tube will be examined to establish the presence of any associated solids. Two additional representative locations will be investigated in a similar manner.

Mr. Young October 5, 1992 Page 3

Subsequent to the solids investigation, large depressions emanating away from the currently known location of the material will be investigated by using a sampling tube or a stainless steel Borings will be conducted to the depth required to hand auger. contamination (based đata upon from investigation). Soil samples will be collected for headspace analyses utilizing the FID/PID meters. When the meters indicate that the extent of contamination has been established, confirmation soil samples will be collected and analyzed for PCE.

All activities associated with the unknown material will be in Level B, in accordance with our previously approved Health and Safety Plan. Following the further characterization described above, a remedial action plan will be prepared to address this source of contamination.

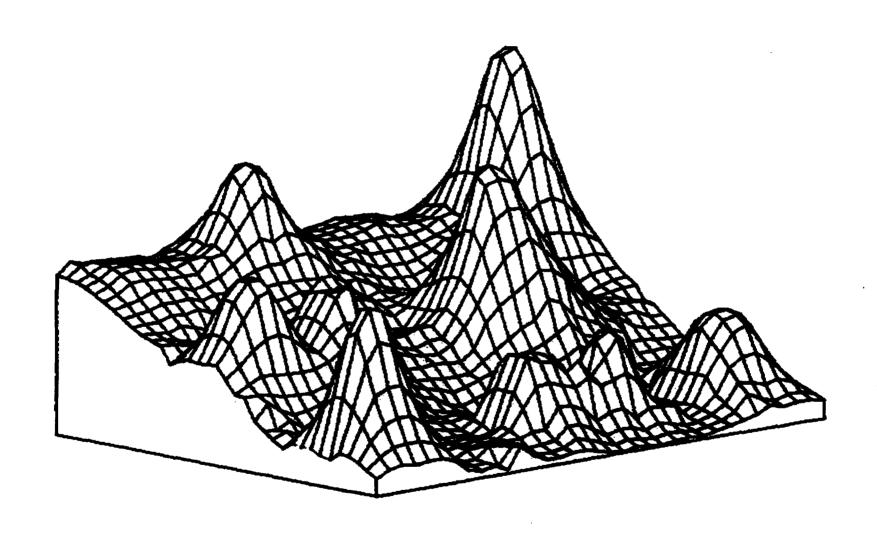


ILLUSTRATION OF GENERAL KARST FEATURES
HOWE VALLEY LANDFILL SITE



1351, 1352 & 1353 PILOT AREA (OIL LAYER ONLY) 9-16-92 5:00

WO #: 90378102

DATE RECEIVED: 9/17/92 LAB #: A2I170043-001

MATRIX: OIL

RESULT   Clus/kg   Limit   METHOD   ANALYSIS DATE   BATCH			LATILE ORGANI	ics		
Chloromethane ND 120,000 SW846 8240 9/18- 9/21/92 266035 Vinyl chloride ND 120,000 SW846 8240 9/18- 9/21/92 266035 Chloroethane ND 120,000 SW846 8240 9/18- 9/21/92 266035 Chloroethane ND 120,000 SW846 8240 9/18- 9/21/92 266035 Chloroethane ND 120,000 SW846 8240 9/18- 9/21/92 266035 Methylene chloride ND 62,000 SW846 8240 9/18- 9/21/92 266035 Acetone Carbon disulfide ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,1-Dichloroethene ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,1-Dichloroethene ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 Chloroform ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 Chloroform ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,1-Trichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloride ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloride ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloride ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,2-Dichloropropene ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloride ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloride ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloride ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloropropene ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloropropene ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloropropene ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloropropene ND 62,000 SW846 8240 9/18- 9/21/92 266035 Carbon tetrachloropropene ND 62,000 SW846 8						_
Chloromethane   ND   120,000   SW846 8240   9/18- 9/21/92   266035	PARAMETER	<u>(ug/kg )</u>	LIMIT	METHOD	ANALYSIS DATE	BATCH
Stromomethane	Chlanamathana	ND	120,000	SW846 8240		
Chloroethane         ND         120,000         SW846 8240         9/18- 9/21/92         266035           Chloroethane         ND         120,000         SW846 8240         9/18- 9/21/92         266035           Methylene chloride         ND         62,000         SW846 8240         9/18- 9/21/92         266035           Acetone         ND         62,000         SW846 8240         9/18- 9/21/92         266035           Carbon disulfide         ND         62,000         SW846 8240         9/18- 9/21/92         266035           1,1-Dichloroethene         ND         62,000         SW846 8240         9/18- 9/21/92         266035           1,1-Dichloroethane         ND         62,000         SW846 8240         9/18- 9/21/92         266035           1,2-Dichloroethane         ND         62,000         SW846 8240         9/18- 9/21/92         266035           1,2-Dichloroethane         ND         62,000         SW846 8240         9/18- 9/21/92         266035           1,1-Trichloroethane         ND         62,000         SW846 8240         9/18- 9/21/92         266035           1,1,1-Trichloroethane         ND         62,000         SW846 8240         9/18- 9/21/92         266035           Bromodichloromethane         ND		* <del>-</del> -		SW846 8240		
Chloroethane         ND         62,000         SW846         8240         9/18-9/21/92         266035           Acetone         ND         620,000         SW846         8240         9/18-9/21/92         266035           Carbon disulfide         ND         62,000         SW846         8240         9/18-9/21/92         266035           1,1-Dichloroethene         ND         62,000         SW846         8240         9/18-9/21/92         266035           1,1-Dichloroethene         ND         62,000         SW846         8240         9/18-9/21/92         266035           1,2-Dichloroethene         ND         62,000         SW846         8240         9/18-9/21/92         266035           1,2-Dichloroethane         ND         62,000         SW846         8240         9/18-9/21/92         266035           1,2-Dichloroethane         ND         62,000         SW846         8240         9/18-9/21/92         266035           2-Butanone         ND         62,000         SW846         8240         9/18-9/21/92         266035           1,1,1-Trichloroethane         ND         62,000         SW846         8240         9/18-9/21/92         266035           Bromodichloromethane         ND         62,000 </td <td></td> <td></td> <td></td> <td>SW846 8240</td> <td>9/18- 9/21/92</td> <td>266035</td>				SW846 8240	9/18- 9/21/92	266035
Methylene chloride ND 62,000 SW846 8240 9/18- 9/21/92 266035  Carbon disulfide ND 62,000 SW846 8240 9/18- 9/21/92 266035  1,1-Dichloroethene ND 62,000 SW846 8240 9/18- 9/21/92 266035  1,2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035  1,2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035  1,2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035  2-Butanone ND 62,000 SW846 8240 9/18- 9/21/92 266035  1,1-Trichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035  2-Butanone 1,1,1-Trichloroethane 170,000 62,000 SW846 8240 9/18- 9/21/92 266035  Carbon tetrachloride ND 62,000 SW846 8240 9/18- 9/21/92 266035  Bromodichloromethane ND 62,000 SW846 8240 9/18- 9/21/92 266035  1,2-Dichloropropane ND 62,000 SW846 8240 9/18- 9/21/92 266035  1,2-Dichloropropane ND 62,000 SW846 8240 9/18- 9/21/92 266035  Trichloroethene ND 62,000 SW846 8240 9/18- 9/21/92 266035  Dibromochloromethane ND 62,000 SW846 8240 9/18- 9/21/92 266035  Dibromochloromethane ND 62,000 SW846 8240 9/18- 9/21/92 266035  Benzene trans-1,3-Dichloropropene ND 62,000 SW846 8240 9/18- 9/21/92 266035  Bromoform ND 62,000 SW846 8240 9/18- 9/21/92 266035  SURROCATE RECOVERY A ACCEPTABLE LIMITS  1,2-Dichloroethane-d4 DIL (70 - 121) Toluene-d8		MID	120,000	SW846 8240	9/18- 9/21/92	266035
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Carbon disulfide ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,1-Dichloroethene ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,1-Dichloroethene, Total ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Butanone ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Butanone 170,000 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloroethane 170,000 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloropropane ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,2-Dichloropropane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloropropane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloropropane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloropropane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloropropane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloropropane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 2-Dichloro		•				266035
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Carbon tetrachloride         ND         62,000         SW846 8240         9/18-9/21/92         266035           Bromodichloromethane         ND         62,000         SW846 8240         9/18-9/21/92         266035           1,2-Dichloropropane         ND         62,000         SW846 8240         9/18-9/21/92         266035           cis-1,3-Dichloropropene         ND         62,000         SW846 8240         9/18-9/21/92         266035           Trichloroethene         ND         62,000         SW846 8240         9/18-9/21/92         266035           Dibromochloromethane         ND         62,000         SW846 8240         9/18-9/21/92         266035           1,1,2-Trichloroethane         ND         62,000         SW846 8240         9/18-9/21/92         266035           Benzene         ND         62,000         SW846 8240         9/18-9/21/92         266035           Bromoform         ND         62,000         SW846 8240         9/18-9/21/92         266035           SURROGATE RECOVERY         Z         ACCEPTABLE LIMITS           1,2-Dichloroethane-d4         DIL         (70-121)           Toluene-d8         DIL         (81-117)		170,000	62,000	SW846 8240		
### Stromodichloromethane   1,2-Dichloropropane		ND	62,000	SW846 8240	9/18- 9/21/92	266035
1,2-Dichloropropane ND 62,000 SW846 8240 9/18- 9/21/92 266035 cis-1,3-Dichloropropene ND 62,000 SW846 8240 9/18- 9/21/92 266035 Trichloroethene ND 62,000 SW846 8240 9/18- 9/21/92 266035 Dibromochloromethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,1,2-Trichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,1,2-Trichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 trans-1,3-Dichloropropene ND 62,000 SW846 8240 9/18- 9/21/92 266035 Bromoform ND 62,000 SW846 8240 9/18- 9/21/92 266035 SURROGATE RECOVERY A ACCEPTABLE LIMITS  1,2-Dichloroethane d4 DIL (70 - 121) Toluene-d8 DIL (81 - 117)	D	MO	82.000	SW846 8240	9/18- 9/21/92	266035
Trichloroethene ND 62,000 SW846 8240 9/18- 9/21/92 266035  Trichloroethene ND 62,000 SW846 8240 9/18- 9/21/92 266035  Dibromochloromethane ND 62,000 SW846 8240 9/18- 9/21/92 266035  1,1,2-Trichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035  Benzene ND 62,000 SW846 8240 9/18- 9/21/92 266035  trans-1,3-Dichloropropene ND 62,000 SW846 8240 9/18- 9/21/92 266035  Bromoform ND 62,000 SW846 8240 9/18- 9/21/92 266035  SURROGATE RECOVERY ACCEPTABLE LIMITS  1,2-Dichloroethane d4 DIL (70 - 121) Toluene-d8 DIL (81 - 117)						266035
Trichloroethene ND 62,000 SW846 8240 9/18- 9/21/92 266035 Dibromochloromethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 1,1,2-Trichloroethane ND 62,000 SW846 8240 9/18- 9/21/92 266035 Enzene ND 62,000 SW846 8240 9/18- 9/21/92 266035 Dromoform ND 62,000 SW846 8240 9/18- 9/21/92 Dromoform ND 62,000 SW846 8240 9/18- 9/21/92 Dromoform ND 62,000 SW846 SW840 Promoform ND 62,000 SW846						266035
Dibromochloromethane Dibromochloromethane ND Dibromoch	CIB 110 BIGHTOTOFTOFT	, •	•			000005
Dibromochloromethane  ND  02,000  SW846 8240  9/18- 9/21/92  266035  Benzene  trans-1,3-Dichloropropene  ND  62,000  SW846 8240  9/18- 9/21/92  266035  Bromoform  ND  62,000  SW846 8240  9/18- 9/21/92  266035  Bromoform  ND  62,000  SW846 8240  9/18- 9/21/92  266035  SURROGATE RECOVERY  ACCEPTABLE LIMITS  1,2-Dichloroethane-d4  DIL  (70 - 121)  (81 - 117)	Trichloroethene					
Benzene	Dibromochloromethane	ND				
Benzene         ND         62,000         SW846 8240         9/18- 9/21/92         266035           Bromoform         ND         62,000         SW846 8240         9/18- 9/21/92         266035           SURROGATE RECOVERY         %         ACCEPTABLE LIMITS           1,2-Dichloroethane-d4         DIL         (70 - 121)           Toluene-d8         DIL         (81 - 117)	1,1,2-Trichloroethane	ND	62,000	SW846 8240	9/18- 9/21/92	266035
trans-1,3-Dichloropropene ND 62,000 Sw846 8240 9/18- 9/21/92 266035 Bromoform ND 62,000 Sw846 8240 9/18- 9/21/92 266035 SURROGATE RECOVERY ACCEPTABLE LIMITS  1,2-Dichloroethane-d4 DIL (70 + 121) (81 - 117)	Pengana	ND	62.00Ò	SW846 8240	9/18- 9/21/92	266035
## Bromoform ND 62,000 SW846 8240 9/18- 9/21/92 266035    SURROGATE RECOVERY	, , ,					266035
1,2-Dichloroethane d4 DIL (70 + 121) Toluene d8 DIL (81 - 117)					9/18- 9/21/92	266035
1,2-Dichloroethane d4 DIL (70 + 121) Toluene d8 DIL (81 - 117)		۵.	A CONTENTA DI	TO I TANTOS		
Toluene-d8 DIL (81 - 117)	SURROGATE RECOVERY	<b>ሕ</b>	HOCKETABL	E LIMITS		
Toluene-d8 DIL (81 - 117)	1.2-Dichloroethane-d4	DIL	( 70 +	121)		
		DIL	•	•		
	Bromofluorobenzene	DIL	( 74 -	121)		

NOTE: AS RECEIVED (NOVE DELECTED)



1351, 1352 & 1353 PILOT AREA (OIL LAYER ONLY) 9-16-92 5:00

WO #: 90378102

LAB #: A2I170043-001

MATRIX: OIL

DATE RECEIVED:

9/17/92

--- TCL VOLATILE ORGANICS ---

2 07 2							
PARAMETER	result (ug/kg_)	REPORTING LIMIT	METHOD	EXTRACTION- ANALYSIS DATE	QC B <u>atch</u>		
4-Methyl-2-pentanone	ND	620,000	SW846 8240	9/18- 9/21/92	266035		
2-Hexanone	ND	620,000	SW846 8240	9/18- 9/21/92	266035		
Tetrachloroethene	1,800,000	62,000	SW846 8240	9/18- 9/21/92	266035		
Toluene	ND	62,000	SW846 8240	9/18- 9/21/92	266035		
1,1,2,2-Tetrachloroethane	ND	62,000	SW846 8240	9/18- 9/21/92	266035		
Chlorobenzene	ND	62,000	SW846 8240	9/18- 9/21/92	266035		
Ethylbenzene	ND	62,000	SW846 8240	9/18- 9/21/92	266035		
Styrene	ND	62,000	SW846 8240	9/18- 9/21/92	266035		
Xylenes, Total	36,000 J	62,000	SW846 8240	9/18- 9/21/92	266035		

SURROGATE RECOVERY	<u><b>%</b></u>	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	DIL DIL	( 70 - 121) ( 81 - 117) ( 74 - 121)

NOTE: AS RECEIVED

NO (NONE DETECTED)

J (DETECTED, BUT BELOW QUARTITATION LINIT; ESTIMATED VALUE)



1351, 1352 & 1353 PILOT AREA (OIL LAYER ONLY) 9-16-92 5:00

WO #: 90378101

LAB #: A21170043-001 DATE RECEIVED: 9/17/92

- - - - - - - - - - TCL SEMIVOLATILE ORGANICS - - - - -

MATRIX: QIL

| 1 0!                         |             |            |             |               |                |  |
|------------------------------|-------------|------------|-------------|---------------|----------------|--|
|                              | RESULT      | REPORTING  |             | EXTRACTION-   | QC             |  |
| <u>PARAMETER</u>             | (ug/kg_)    | LIMIT      | METHOD      | ANALYSIS DATE | BATCH          |  |
|                              |             |            | <del></del> |               |                |  |
| Acenaphthene                 | 9,600 J     | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Acenaphthylene               | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Anthracene                   | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Benzo(a)anthracene           | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Benzo(b)fluoranthene         | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Benzo(k)fluoranthene         | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Benzo(ghi)perylene           | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Benzo(a)pyrene               | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Bis(2-chloroethoxy)methane   | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Bis(2-chloroethyl)ether      | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| 2,2'-oxybis(1-Chloropropane) | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Bis(2-ethylhexyl)phthalate   | ND -        | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| 4-Bromophenyl phenyl ether   | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Butyl benzyl phthalate       | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Carbazole                    | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | <b>262</b> 025 |  |
| 4-Chloroaniline              | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| 2-Chloronaphthalene          | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| 4-Chlorophenyl phenyl ether  | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Chrysene                     | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Dibenzo(a,h)anthracene       | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Dibenzofuran                 | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| Di-n-butyl phthalate         | ND          | 80,000     | SW846 8270  | 9/18-`9/21/92 | 262025         |  |
| 1,2-Dichlorobenzene          | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| 1,3-Dichlorobenzene          | ND          | 80,000     | SW846 8270  | 9/18- 9/21/92 | 262025         |  |
| SURROGATE RECOVERY           | <u>x</u>    | ACCEPT ABL | LIMITS      | •             |                |  |
| Nitrobenzene-d5              | <b>D</b> IL | ( 23 - 1   |             |               |                |  |
| 2-Fluorobiphenyl             | DIL         | ( 30 - 1   |             |               |                |  |
| Terphenyl-d14                | DIL         | ( 18 - 1   |             |               |                |  |
| 2-Fluorophenol               | DIL         | ( 25 -     |             |               |                |  |
| Pheno1-d5                    | DIL         | ( 24 - 1   |             | •             |                |  |
| 2,4,6-Tribromophenol         | DIL         | ( 19 - )   | 122}        |               |                |  |

ROTE: AS RECEIVED

NO INCOME DETECTED!

BLEVATED DETECTION SINITS DUE TO TICS.

1 OPERCTED. BUT BELOW QUARTITATION CINIT: ESTIMATED VALUE)

Z 606 2711204 HATCHER INC-LEX. 605



1351, 1352 & 1353 PILOT AREA (OIL LAYER ONLY) 9-16-92 5:00

WO #: 90378101

LAB #: A21170043-001 DATE RECEIVED: 9/17/92

MATRIX: OIL

- TCL SEMIVOLATILE ORGANICS - - - -1 07 RESULT REPORTING EXTRACTION-QC. PARAMETER (ug/kg) LIMIT METHOD ANALYSIS DATE <u>BATCH</u> 1.4-Dichlorobenzene ND 80,000 SW846 8270 9/18- 9/21/92 262025 3.3'-Dichlorobenzidine 160,000 ND SW846 8270 9/18- 9/21/92 262025 Diethyl phthalate 80,000 ND SW846 8270 262025 9/18- 9/21/92 Dimethyl phthalate ND 80,000 SW846 8270 9/18- 9/21/92 262025 2,4-Dinitrotoluene ND 000,08 SW846 8270 9/18- 9/21/92 262025 2,6-Dinitrotoluene ND 80,000 SW846 8270 9/18- 9/21/92 262025 Di-n-octyl phthalate ND 80,000 SW846 8270 9/18- 9/21/92 262025 Fluoranthene ND 80,000 SW846 8270 9/18- 9/21/92 262025 Fluorene ND 80,000 SW846 8270 9/18- 9/21/92 262025 "exachlorobenzene ND 80,000 SW846 8270 9/18- 9/21/92 262025 .exachlorobutadiene 80,000 ND SW846 8270 9/18- 9/21/92 262025 Hexachlorocyclopentadiene ND 9/18- 9/21/92 80,000 SW846 8270 262025 Hexachloroethane ND 80,000 SW846 8270 9/18- 9/21/92 262025 Indeno(1,2,3-cd)pyrene ND 80,000 SW846 B270 9/18- 9/21/92 262025 Isophorone ND 80.000 SW846 8270 9/18- 9/21/92 262025 2-Methylnaphthalene 14,000 J 80,000 SW846 8270 9/18- 9/21/92 262025 Naphthalene 80,000 ND SW846 8270 9/18- 9/21/92 262025 Nitrobenzene ND 80,000 SW846 8270 9/18- 9/21/92 262025 2-Nitroaniline ND 400,000 SW846 8270 9/18- 9/21/92 262025 3-Nitroaniline ND 400,000 9/18- 9/21/92 SW846 8270 262025 4-Nitroaniline ND 400,000 SW846 8270 9/18- 9/21/92 262025 N-Nitrosodiphenylamine ND 80,000 9/18- 9/21/92 SW846 8270 262025 N-Nitrosodi-n-propylamine ND 80,000 SW846 8270 9/18- 9/21/92 262025 Phenanthrene ND 80,000 SW846 8270 9/18- 9/21/92 262025 SURROGATE RECOVERY ACCEPTABLE LIMITS Nitrobenzene-d5 (23 - 120)DIL 2-Fluorobiphenyl DIL (30 - 115)Terphenyl-d14 DIL (18 - 137)2-Fluorophenol DIL (25 - 121)Phenol-d5 (24 - 113)DIL 2,4,6-Tribromophenol (19 - 122)DIL

BOTE: AS RECEIPED

ID (BORE DETECTED)

ELEVATED DETECTION LIMITS DUE TO TICS.

DETECTED, BUT BELOW GUARTITATION LIMIT: ESTIMATED PALCE)

Z 606 2711204 HATCHER INC-LEX. 08



1351, 1352 & 1353 PILOT AREA (OIL LAYER ONLY) 9-16-92 5:00

WO #: 90378101

LAB #: A2I170043-001

DATE RECEIVED:

9/17/92

MATRIX: OIL

TOP | EXTRACTION-

QC <u>METHOD</u> ANALYSIS DATE **BATCH** (ug/kg) LIMIT **PARAMETER** 9/18- 9/21/92 262025 SW846 8270 80,000 9,600 J Pyrene 262025 9/18- 9/21/92 80,000 SW846 8270 ND 1,2,4-Trichlorobenzene

| SURROGATE RECOVERY   | <u>x</u> | ACCEPTABLE LIMITS |
|----------------------|----------|-------------------|
| Nitrobenzene-d5      | DIL      | ( 23 - 120)       |
| 2-Fluorobiphenyl     | DIL      | ( 30 - 115)       |
| Terphenyl-d14        | DIL      | ( 18 - 137)       |
| 2-Fluorophenol       | DIL      | ( 25 - 121)       |
| Phenol-d5            | DIL      | ( 24 ~ 113)       |
| 2.4.6-Tribromonhenol | DIL      | ( 19 - 122)       |

SOTE: AS RECEIVED

AD (MORE DETECTED)

ELEVATED DETECTION LIMITS DUE TO TICS.

J (DETECTED, BUT BELOW QUARTITATION LIMIT: ESTIMATED VALUE)

60

Z 606 2711204 HATCHER INC-LEX.



1351, 1352 & 1353 PILOT AREA (OIL LAYER ONLY) 9-16-92 5:00

WO #: 90378101

LAB #: A2I170043-001 DATE RECEIVED: 9/17/92

MATRIX: OIL

|                                | 4        | OF 4      | •          |               |                |
|--------------------------------|----------|-----------|------------|---------------|----------------|
|                                | RESULT   | REPORTING |            | EXTRACTION-   | <b>Q</b> C     |
| PARAMETER                      | (ug/kg_) | LIMIT     | METHOD     | ANALYSIS DATE | <b>BATCH</b>   |
| 4-Chloro-3-methylphenol        | ND       | 80,000    | SW846 8270 | 9/18- 9/21/92 | 262025         |
| 2-Chlorophenol                 | ND       | 80,000    | SW846 8270 | 9/18- 9/21/92 | 262025         |
| 2,4-Dichlorophenol             | ND       | 80,000    | SW846 8270 | 9/18- 9/21/92 | <b>2620</b> 25 |
| 2,4-Dimethylphenol             | ND       | 80,000    | SW846 8270 | 9/18- 9/21/92 | 262025         |
| 2,4-Dinitrophenol              | ND       | 400,000   | SW846 8270 | 9/18- 9/21/92 | 262025         |
| 4,6-Dinitro-<br>2-methylphenol | ND       | 400,000   | SW846 8270 | 9/18- 9/21/92 | 262025         |
| 2-Methylphenol                 | ND       | 80,000    | SW846 8270 | 9/18- 9/21/92 | 262025         |
| 4-Methylphenol                 | ND       | 80,000    | SW846 8270 | 9/18- 9/21/92 | 262025         |
| 2-Nitrophenol                  | ND       | 80,000    | SW846 8270 | 9/18- 9/21/92 | 262025         |
| 4-Nitrophenol                  | סא       | 400,000   | SW846 8270 | 9/18- 9/21/92 | 262025         |
| Pentachlorophenol              | ND       | 400,000   | SW846 8270 | 9/18- 9/21/92 | 262025         |
| Pheno1                         | ND       | 80,000    | SW846 8270 | 9/18- 9/21/92 | 262025         |
| 2,4,5-Trichlorophenol          | NĐ       | 80,000    | SW846 8270 | 9/18- 9/21/92 | 262025         |
| 2,4,6-Trichlorophenol          | ND       | 80,000    | SW846 8270 | 9/18- 9/21/92 | 262025         |

| SURROGATE RECOVERY   | ¥   | ACCEPTABLE LIMITS |
|----------------------|-----|-------------------|
| Ni trobenzene-d5     | DIL | ( 23 - 120)       |
| 2-Fluorobiphenyl     | DIL | ( 30 - 115)       |
| Terphenyl-d14        | DIL | ( 18 - 137)       |
| 2-fluorophenol       | DIL | ( 25 - 121)       |
| Phenol-d5            | DIL | ( 24 - 113)       |
| 2,4,6-Tribromophenol | DIL | ( 19 - 122)       |

NOTE: AS RECEIVED

10 (NOBE DETECTED)

ELEVATED DETECTION LINITS BOR TO TICS.



1351, 1352 & 1353 PILOT AREA (LIQUID LAYER ONLY) 9-16-92 5:00

WO #: 90379101

LAB #: A2I170043-002 DATE RECEIVED: 9/17/92

MATRIX: LIQUID

| PARAMETER                 | RESULT (ug/L ) | REPORTING LIMIT | METHOD     | EXTRACTION-<br>ANALYSIS DATE | QC<br><u>BATCH</u> |
|---------------------------|----------------|-----------------|------------|------------------------------|--------------------|
| 1.mg-fitorray             | <u> </u>       |                 | 1          |                              |                    |
| Chloromethane             | ND             | 2,000           | SW846 8240 | 9/21/92                      | 266048             |
| Bromomethane              | NID            | 2,000           | SW846 8240 | 9/21/92                      | 266048             |
| Vinyl chloride            | ND             | 2,000           | SW846 8240 | 9/21/92                      | 266048             |
| Chloroethane              | NĎ             | 2,000           | SW846 8240 | 9/21/92                      | 266048             |
| Methylene chloride        | NID            | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| Acetone                   | 3,400 J        | 10,000          | SW846 8240 | 9/21/92                      | 266048             |
| Carbon disulfide          | ND             | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| 1,1-Dichloroethene        | 1,400          | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| 1,1-Dichloroethane        | 1,600          | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| 1,2-Dichloroethene, Total | 24,000         | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| hloroform                 | 1,400          | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| 1,2-Dichloroethane        | ND             | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| 2-Butanone                | 6,900 J        | 10,000          | SW846 8240 | 9/21/92                      | 266048             |
| 1,1,1-Trichloroethane     | 14,000         | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| Carbon tetrachloride      | ND             | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| Bromodichloromethane      | ND             | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| 1,2-Dichloropropane       | ND             | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| cis-1,3-Dichloropropene   | ND             | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| Trichloroethene           | 1,600          | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| Dibromochloromethane      | ND             | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| 1,1,2-Trichloroethane     | ND             | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| Benzene                   | ND             | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| trans-1,3-Dichloropropene | ND             | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| Bromoform                 | ND             | 1,000           | SW846 8240 | 9/21/92                      | 266048             |
| SURROGATE RECOVERY        | 34             | ACCEPTABLI      | E LIMITS   |                              |                    |
| 1,2-Dichloroethane-d4     | 93             | <b>( 70 -</b> 1 | 121)       |                              |                    |
| Toluene-d8                | 104            | (81 -           |            |                              |                    |
| Bromofluorobenzene        | 98             | (74 - )         | (21)       |                              |                    |

NOTE: AS RECRIVED
NO (NORE DETECTED)

J (OBTECTED, BUT BELOW QUANTITATION LIMIT; ESTIMATED VALUE)



1351, 1362 & 1353 PILOT AREA (LIQUID LAYER ONLY) 9-16-92 5:00

WO #: 90379101

LAB #: A2I170043-002

MATRIX: LIQUID

DATE RECEIVED:

9/17/92

| TOL VOLATILE UNGANICS TO THE UNGANICS |                  |                      |            |                              |                    |
|---------------------------------------|------------------|----------------------|------------|------------------------------|--------------------|
| PARAMETER                             | RESULT<br>(ug/L) | OF 1 REPORTING LIMIT | METHOD     | EXTRACTION-<br>ANALYSIS DATE | QC<br><u>BATCH</u> |
| 4-Methyl-2-pentanone                  | ND               | 10,000               | SW846 8240 | 9/21/92                      | 266048             |
| 2-Hexanone                            | ND               | 10,000               | SW846 8240 | 9/21/92                      | 266048             |
| Tetrachloroethene                     | 4,800            | 1,000                | SW846 8240 | <b>9/21/</b> 92              | 266048             |
| Toluene                               | 400 J            | 1,000                | SW846 8240 | 9/21/92                      | 266048             |
| 1,1,2,2-Tetrachloroethane             | ND               | 1,000                | SW846 8240 | 9/21/92                      | 266048             |
| Chlorobenzene                         | ND               | 1,000                | SW846 8240 | 9/21/92                      | 266048             |
| Ethylbenzene                          | ND               | 1,000                | SW846 8240 | 9/21/92                      | 266048             |
| Styrene                               | ND               | 1,000                | SW846 8240 | 9/21/92                      | 266048             |
| Xylenes, Total                        | ND               | 1,000                | SW846 8240 | 9/21/92                      | 266048             |

| SURROGATE RECOVERY    | <u>*</u> | ACCEPTABLE LIMITS |
|-----------------------|----------|-------------------|
| 1,2-Dichloroethane-d4 | 93       | ( 70 - 121)       |
| Toluene-d8            | 104      | ( 81 - 117)       |
| Bromofluorobenzene    | 98       | ( 74 - 121)       |

NOTE: AS RECEIVED
NO (NONE DETECTED)

J (DETECTED, BUT BELOW QUARTITATION LIMIT; ESTIMATED VALUE)



1351, 1352 & 1353 PILOT AREA (LIQUID LAYER ONLY) 9-16-92 5:00

WO #: 90379104

LAB #: A21170043-002 DATE RECEIVED: 9/17/92

MATRIX: LIQUID

| PARAMETER  | RESULT (UK/L)            | REPORTING<br>LIMIT   | METHOD                                 | EXTRACTION-<br>ANALYSIS DATE                    | QC<br><u>BATCH</u>         |  |
|--|--------------------------|--|--|---|----------------------------|--|
| Acenaphthene   | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| Acenaphthylene   | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| Anthracene   | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| Benzo(a)anthracene   | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| Benzo(b)fluoranthene   | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| Benzo(k)fluoranthene   | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| Benzo(ghi)perylene   | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| Benzo(a)pyrene   | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| Bis(2-chloroethoxy)methane   | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| <pre>% is(2-chloroethyl)ether .,2'-oxybis(1-Chloropropane) Bis(2-ethylhexyl)phthalate</pre>  | ND<br>ND                 | 200<br>200<br>200  | SW846 8270<br>SW846 8270<br>SW846 8270 | 9/19- 9/23/92<br>9/19- 9/23/92<br>9/19- 9/23/92 | 263001<br>263001<br>263001 |  |
| 4-Bromophenyl phenyl ether   | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| Butyl benzyl phthalate   | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| Carbazole  | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| 4-Chloroaniline  | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| 2-Chloronaphthalene  | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| 4-Chlorophenyl phenyl ether  | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| Chrysene<br>Dibenzo(a,h)anthracene<br>Dibenzofuran   | ND<br>ND                 | 200<br>200<br>200  | SW846 8270<br>SW846 8270<br>SW846 8270 | 9/19- 9/23/92<br>9/19- 9/23/92<br>9/19- 9/23/92 | 263001<br>263001<br>263001 |  |
| Di-n-butyl phthalate   | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| 1,2-Dichlorobenzene  | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| 1,3-Dichlorobenzene  | ND                       | 200  | SW846 8270                             | 9/19- 9/23/92                                   | 263001                     |  |
| SURROGATE RECOVERY   | <u>\$</u>                | ACCEPTABLE   | LIMITS                                 |   |                            |  |
| Nitrobenzene-d5 2-Fluorobipheny1 Terpheny1-d14 2-Fluorophenol Phenol-d5 2,4,6-Tribromophenol | DIL<br>DIL<br>DIL<br>DIL | ( 23 - 1<br>( 30 - 1<br>( 18 - 1<br>( 25 - 1<br>( 24 - 1<br>( 19 - 1 | 15)<br>37)<br>21)<br>13)               |   |                            |  |

NOTE: AS RECRIVED

NO (NONE DETECTED)

RESTATED DETECTION LIMITS DOE TO TICS.



1351, 1352 & 1353 PILOT AREA (LIQUID LAYER ONLY) 9-16-92 5:00

WO #: 90379104

LAB #: A2I170043-002 DATE RECEIVED: 9/17/92

MATRIX: LIQUID

| TCL SEMIVOLATILE ORGANICS        |               |                    |                          |                                |                    |  |
|----------------------------------|---------------|--------------------|--------------------------|--------------------------------|--------------------|--|
| <u>Parameter</u>                 | RESULT (ug/L) | REPORTING<br>LIMIT | METHOD                   | EXTRACTION-<br>ANALYSIS DATE   | QC<br><u>BATCH</u> |  |
| -                                |               |                    | <del>-</del>             |                                | 000001             |  |
| 1,4-Dichlorobenzene              | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| 3,3'-Dichlorobenzidine           | ND            | 440                | SW846 8270               | 9/19- 9/23/92                  | 263001<br>263001   |  |
| Diethyl phthalate                | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| Dimethyl phthalate               | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| 2,4-Dinitrotoluene               | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| 2,6-Dinitrotoluene               | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| Di-n-octyl phthalate             | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| Fluoranthene                     | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| Fluorene                         | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
|                                  |               | 000                | MIDAC 0070               | 0/10 0/02/02                   | 263001             |  |
| Hexachlorobenzene                | ND            | 200                | SW846 8270               | 9/19- 9/23/92<br>9/19- 9/23/92 | 263001             |  |
| Hexachlorobutadiene              | ND            | 200                | SW846 8270<br>SW846 8270 | 9/19- 9/23/92                  | 263001             |  |
| Hexachlorocyclopentadiene        | D             | 200                | 5#040 02/U               | 3/13- 3/23/32                  | 200001             |  |
| Hexachloroethane                 | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| Indeno(1,2,3-cd)pyrene           | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| Isophorone                       | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| 2-Methylnaphthalene              | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| Naphthalene                      | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| Nitrobenzene                     | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| O Nitanaanilina                  | ND            | 1,100              | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| 2-Nitroaniline<br>3-Nitroaniline | ND            | 1,100              | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
| 4-Nitroaniline                   | ND            | 1,100              | SW846 8270               | 9/19- 9/23/92                  | 263001             |  |
|                                  |               | •                  |                          |                                | 000001             |  |
| N-Nitrosodiphenylamine           | ND            | 200                | SW846 8270               | 9/19~ 9/23/92                  | 263001             |  |
| N-Nitrosodi-n-propylamine        | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 263001<br>263001   |  |
| Phenanthrene                     | ND            | 200                | SW846 8270               | 9/19- 9/23/92                  | 203001             |  |
| SURROGATE RECOVERY               | *             | ACCEPTABL          | E LIMITS                 |                                |                    |  |
| Nitrobenzene-d5                  | DIL           | ( 23 -             |                          |                                |                    |  |
| 2-Fluorobiphenyl                 | DIL           | ( 30 -             | •                        |                                |                    |  |
| Terphenyl-d14                    | DIL           | ( 18 -             |                          |                                |                    |  |
| 2-Fluorophenol                   | DIL           | ( 25 -             |                          | •                              |                    |  |
| Phenol-d5                        | DIL           | ( 24 -             |                          |                                |                    |  |
| 2,4,6-Tribromophenol             | DIL           | ( 19 -             | 122)                     |                                |                    |  |

BOTE: AS RECEIVED

BD (BONE DETECT)

PLEVATED DETECTION LINITS DUE TO TICS.



1351, 1352 & 1353 PILOT AREA (LIQUID LAYER ONLY) 9-16-92 5:00

WO #: 90379104

LAB #: A2[170043-002

DATE RECEIVED:

9/17/92

MATRIX: LIQUID

- TCL SEMIVOLATILE ORGANICS - - -RESULT REPORTING

QC EXTRACTION-ANALYSIS DATE BATCH (ug/L\_ LIMIT **PARAMETER** 263001 9/19- 9/23/92 200 \$W846 8270 ND Pyrene 263001 9/19- 9/23/92 200 SW846 8270 1,2,4-Trichlorobenzene ND

ACCEPTABLE LIMITS SURROGATE RECOVERY (23 - 120)DIL Nitrobenzene-d5 (30 - 115)DIL 2-Fluorobiphenyl (18 - 137)Terphenyl-d14 DIL DIL (25 - 121)2-Fluorophenol (24 - 113)DIL henol-d5 (19 - 122)DIL 2,4,6-Tribromophenol

#012: AS RECEITED 11 (MORE DETECTED)

ELEVATED DETECTION LINITS DUE TO TICS.



1351, 1352 & 1353 PILOT AREA (LIQUID LAYER ONLY) 9-16-92 5:00

WO #: 90379104

LAB #: A2I170043-002 DATE RECEIVED: 9/17/92

MATRIX: LIQUID

| 4 OF 4                  |        |           |            |                 |              |  |  |
|-------------------------|--------|-----------|------------|-----------------|--------------|--|--|
|                         | RESULT | REPORTING |            | EXTRACTION-     | QC           |  |  |
| PARAMETER               | (ug/L) | LIMIT     | METHOD     | ANALYSIS DATE   | <u>BATCH</u> |  |  |
| 4-Chloro-3-methylphenol | ND     | 200       | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |
| 2-Chlorophenol          | ND     | 200       | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |
| 2,4-Dichlorophenol      | ND     | 200       | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |
| 2,4-Dimethylphenol      | ND     | 200       | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |
| 2,4-Dinitrophenol       | ND     | 1,100     | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |
| 4,6-Dinitro-            | ND     | 1,100     | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |
| 2-methylphenol          |        | •         |            | 3, 42 1, 13, 12 |              |  |  |
| 2-Methylphenol          | ND     | 200       | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |
| 4-Methylphenol          | ND     | 200       | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |
| 2-Nitrophenol           | ND     | 200       | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |
| 4-Nitrophenol           | ND     | 1,100     | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |
| Pentachlorophenol       | ND     | 1,100     | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |
| Phenol                  | ND     | 200       | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |
| 2,4,5-Trichlorophenol   | ND     | 200       | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |
| 2,4,6-Trichlorophenol   | ND     | 200       | SW846 8270 | 9/19- 9/23/92   | 263001       |  |  |

| SURROGATE RECOVERY   | <u>X</u> | ACCEPTABLE LIMITS |
|----------------------|----------|-------------------|
| Nitrobenzene-d5      | DIL      | ( 23 ~ 120)       |
| 2-Fluorobiphenyl     | DIL      | (30 - 115)        |
| Terphenyl-d14        | DIL      | ( 18 - 137)       |
| 2-Fluorophenol       | DIL      | (25 - 121)        |
| Phenol-d5            | DIL      | ( 24 - 113)       |
| 2,4,6-Tribromophenol | DIL      | (19 - 122)        |

NOTE: AS RECEIVED

AD (NOTE DETECTED)

ELEVATED DETECTION LINITS DOE TO TICS.



# FAX TRANSMITTAL COVER SHEET

| DATE:       | 10/5/92                        |
|-------------|--------------------------------|
|             | N-R-(2:                        |
| TO:         | Vestor Going                   |
| COMPANY:    | U.S. 2PA ()                    |
| PAX NO:     | (404) 347-1695                 |
| FROM:       | Tim Kususs                     |
| TOTAL PAGES | (INCLUDING COVER):             |
| COMMENTS: _ | House Only Land Till - Unknown |
| Molinia     | Q Deal Technical Managendum-   |
|             | Vertor - Albone soveew and     |
| Tol &       | Back to me with any comments   |
|             |                                |
|             | danley                         |
| JOB NO:     | 0064-00/                       |
| •           |                                |

HATCHER-SAYRE, INC. OFFICE NO: (606) 271-0269 FAX NO: (606) 271-1204



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

# REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365



October 2, 1992

Mr. James D. Knauss, Ph.D. Project Manager Hatcher-Sayre, Inc. 3150 Custer Drive, Suite 301 Lexington, Kentucky 40517

RE: Howe Valley Landfill, Hardin County, Kentucky

Dear Mr. Knauss:

The U.S. Environmental Protection Agency has reviewed the September 23, 1992 Technical Memorandum regarding the buried drums. The following review comments are provided in addition to the comments provided to you by Mr. Charles Eger of the EPA Region IV Emergency Response and Removal Branch, during our telephone conference on Tuesday, September 29:

Page 3, First Paragraph

This paragraph describes the procedure for investigating areas that exhibit anomalous EM-31D readings. It is recommended that the backhoe be equipped with an explosion proof shield for operator safety. This shield is specified in the sampling section on Page 5 and should be used for all stages of the drum removal.

2. Page 4, First and Second Paragraph

It is mentioned that "Each drum will be stored and number coded at the plastic-lined staging area." The first sentence of the second paragraph states that drums may be relocated to a central storage area for waste consolidation. Assuming that the plastic-lined staging area and the central storage area are the same area, then the perimeter of the staging area should be constructed with a soil berm as a contingency for an unexpected rupture and/or spillage of drum contents.

3. Page 4, Open and Closed Container Sampling

The contents of all containers, whether open or closed, must be sampled and analyzed.

Mr. J. Knauss October 2, 1992 Page 2

# Page 5, <u>Waste Disposal Activities</u>

This paragraph states that the drums will be shipped to a CERCLA-approved facility for disposal. CERCLA does not regulate waste disposal facilities. This statement should be changed to RCRA-approved facility.

5. Page 6, Last Paragraph

There is no level of protection specified for the excavation phase of the drum removal. EPA recommends that the equipment operator and any assisting technicians utilize Level B personnel protection.

6. General

This plan does not specify procedures for handling soil contaminated by leaking/ruptured drums, or soil that may be contaminated during handling of the drums. The disposition of contaminated soil must be addressed.

Please modify the Technical Memorandum in accordance with these review comments, and with the comments provided in our September 29 telephone conference. The revised document should be submitted to EPA as soon as possible, so that these issues are resolved quickly and removal of the buried drums can begin without any further delay.

Please call me if you have any questions.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

pc: Harold Taylor, EPA
Ralph McKeen, Weston

# TELECOPY TRANSMITTAL FORM ROY F. WESTON, INC.

1880-H Beaver Ridge Circle Norcross, Georgia 30071 Confirmation Telephone (404) 448-0644 Telecopy Telephone (404) 368-1168

|                  | NESTOR YOUNG                                 |
|------------------|--|
| 10:              | TVESTOR TOUNG                                |
| TELECOPY NUMBER: | 404-347-1695                                 |
| FROM:            | RALPH MEKEEN                                 |
| DATE:            | Oct 1, 1992                                  |
| NUMBER OF PAGES: | (Including Transmittal Cover Sheet)          |
| MESSAGE:         |  |
|                  |  |
|                  | IF ALL PAGES ARE NOT RECEIVED<br>PLEASE CALL |
|                  | AT (404) 448-0644                            |

1880-H BEAVER RIDGE CIRCLE NORCROSS, GEORGIA 30071 404-448-0644 • FAX; 404-368-1168

October 1, 1992

Mr. Nestor Young Remedial Project Manager U.S. Environmental Protection Agency, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

WESTON W.O. No. 04400-017-091

NORCROSS→

RE: Drum Removal Plan Review

Work Assignment No. 17-4XN8

Howe Valley Landfill

Howe Valley, Hardin County, Kentucky

Contract No. 68-W9-0057

Document Control No. 4400-17-ACGP

# Dear Mr. Young:

Roy F. Weston, Inc. (WESTON) has prepared the attached comments in response to the Technical Memorandum concerning the discovery of buried drums at the Howe Valley Landfill Site. The memorandum was prepared for Dow Corning by Hatcher-Sayre, Inc., and is dated September 23, 1992. WESTON received a copy of the document via facsimile on September 29, 1992. WESTON is providing Remedial Design/Remedial Action oversight and project assistance to the U.S. Environmental Protection Agency under EPA Contract No. 68-W-0057.

Please call me at (404) 448-0644 if you have any questions.

Sincerely,

ROY F. WESTON, INC.

Ralph P. McKeen, P.E. Work Assignment Manager

RPM/cmf

cc: Annie Godfrey, US EPA, Region IV Lester Lewis, US EPA, Region IV

Randy Ferguson, WESTON



# Contract No. 68-W9-0057 Work Assignment No. 17-4XN8 Document Control No. 4400-17-ACGP

Two buried drums have already been discovered and anomalous readings from the geophysical surveys have indicated the potential presence of additional drums in the same vicinity. The Technical Memorandum describes the procedures for detecting, excavating, and disposing of any buried drums found on site. In general, the memorandum has included thorough procedures for the drum removal activities. One would expect this level of detail since Dow Corning and Hatcher-Sayre, Inc. have removed over 16,000 drums previously at this site. The following minor inconsistencies and recommendations from WESTON's review are presented herein.

# Page 3, Paragraph 1

This paragraph describes the procedure for investigating areas that exhibit anomalous EM-31D readings. It is recommended that the backhoe be equipped with an explosion proof shield for operator safety. This shield is specified in the sampling section on Page 5 and should be used for all stages of the drum removal.

# 2. Page 4, Paragraph 1

The memorandum states that each drum will placed in a plastic lined staging area. WESTON recommends a soil berm be constructed around the staging area as a contingency for an unexpected rupture and spillage of drum contents. Also, plans should be made to cover the drums with plastic since it may take some time to complete disposal arrangements.

# 3. Page 5, Waste Disposal Activities

This paragraph states that the drums will be shipped to a CERCLA-approved facility for disposal. CERCLA does not regulate disposal activities. This should be changed to a RCRA-approved facility.

# 4. Page 7, Personnel Level of Protection

Health and safety procedures for overpacking and shipping of drums are described in this section. There is no level of personal protection specified for the excavation phase. WESTON recommends that the equipment operator and any technicians assisting in the investigation phase utilize Level B equipment.





# 5. General

No mention is made of soils that may be contaminated as a result of leaking drums or drums ruptured when being excavated. Presumably these soils will be handled in a similar fashion as the drums; however, the disposition of any contaminated soils should be discussed.

# 6. General

As discussed during our site visit on Tuesday, September 22, 1992, the EPA may want to consider utilization of the Technical Assistance Team (TAT) contract to provide oversight of Level B operations. Under the ARCS contract, WESTON is not equipped to perform direct Level B entries and would thus be limited to field observations from within the "Support Zone". However, the site layout does lend itself to favorable viewing of the entire site from the "Support Zone", particularly with field binoculars.



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

# REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

September 30, 1992

Mr. Rick Hogan, Chief
Federal Superfund Section
Division of Waste Management
Kentucky Department for
Environmental Protection
Frankfort Office Park
18 Reilly Road
Frankfort, Kentucky 40601

RE: Howe Valley Landfill, Howe Valley, Hardin County, Kentucky

Dear Mr. Hogan:

As you may know, Dow Corning has begun implementation of the Inorganic Remedial Design Plan, and Pilot-Scale Treatability Study of the organic contaminated soils. While preparing the site for the treatability study, two intact buried drums and free-floating organic liquid on groundwater were discovered. The organic liquid is not believed to be associated to the buried drums, since the liquid was discovered at a separate location. I have enclosed copies of recent correspondence from Dow Corning that will describe the circumstances of these events in more detail.

The buried drums have not been removed. A geophysical survey will be conducted to locate other areas of the site that may contain more drums. Enclosed is a Technical Memorandum prepared by Hatcher-Sayre Inc. (Dow's contractor) that describes the proposed geophysical survey and drum removal plan. Please review this document and return any comments as soon as possible (verbal comments are acceptable).

The drum removal plan will be implemented upon approval of the attached memo, and completion of the geophysical survey. A schedule of these activities will forwarded to you as soon as it becomes available.

Concerning the organic liquid, Dow will submit a proposed plan to investigate the source and extent of this contamination, and subsequently a clean-up strategy. Based on preliminary discussions with Hatcher-Sayre on this issue, it appears that a thorough investigation may be difficult because of the karst topography of the site. A proposed plan to address this issue will be forwarded to you as soon as it is submitted.

Mr. Hogan September 30, 1992 Page 2

If you have any questions concerning this correspondence, or would like to discuss this project further, please feel free to call me at (404) 347-7791.

Sincerely,

Neston Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosures:

Dow Corning letter, dated September 9, 1992
 Dow Corning letter, dated September 16, 1992

3. Technical Memorandum, dated September 23, 1992

DOW CORNING

# DOW CORNING CORPORATION

| To:  |
|--|
| Address  |
| · · · · · · · · · · · · · · · · · · ·  |
| Telephone:   |
|  |
| Fax No. 404-347-1695   |
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|  |
| From: James Mersereau-Kempf.   |
| The teaching periods.  |
| Dow Corning Corporation  |
| Dow Corning Corporation Meahant Medians Strains Strains Strains Fax No. 517-496-5419 |
| Fax No. 517-496-5419   |
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PAGE

# EPOOTISA HATCHER SAYRE YALLEY

|                                      | reporting |              |       |                     |
|--------------------------------------|-----------|--------------|-------|---------------------|
| PARAMETER                            | rebult    | _LIMIT_      | UNIT  | METHOD              |
| 1951, 1352 & 1953 PILOT AREA (OIL LA | YER ONLY) | 9-16-92 5:00 |       |                     |
| TCL Semivolatile Organica            |           |              |       |                     |
| Açenaphthene                         | 9,600 J   | 80,000       | ug/kg | SW846 8270          |
| Acenaphthylane                       | ND D      | 80,000       | ug/kg | 8W846 8270          |
| Anthracena                           | . ND      | 80,000       | ug/kg | BW846 8270          |
| Benso(a)anthracene                   | स्र       | 80,000       | ug/kg | 8W848 6270          |
| Henso(b) fluoranthene                | ND        | 80,000       | ug/kg | 8W846 8270          |
| Benso(k)fluoranthene                 | ND        | 80,000       | ug/kg | 8W846 8270          |
| Benso(ghl)perylane                   | CIM       | 80,000       | ug/kg | SW846 8270          |
| Benzo(a)pyrene                       | MD        | 80,000       | ug/kg | BW846 8270          |
| Bis(2-chloroethoxy)methane           | ND        | 80,000       | ug/kg | SW846 8270          |
| Bis(2-chloroethyl)ether              | ND        | 80,000       | ug/kg | 6W846 8270          |
| 2,2'-oxybis(1-Chloropropane)         | ND        | 80,000       | ug/kg | SW846 8270          |
| Bis(2-ethylhexyl)phthalate           | ND        | 80,000       | ug/kg | AW846 8270          |
| 4-Bromophenyl phonyl ether           | ND        | 80,000       | ug/kg | EW848 8270          |
| Butyl bensyl phthalate               | NID)      | 80,000       | ug/kg | SW846 8270          |
| Carbascle                            | KD        | 80,000       | ug/kg | 5W846 8270          |
| 4-Chlorosniline                      | KID       | 80,000       | ug/kg | SW846 8270          |
| 2-Chloronayhthalene                  | ND        | 60,000       | ug/kg | 8N846 8270          |
| 4-Chlorophenyl phenyl ether          | KID       | 80,000       | ug/kg | SW846 8270          |
| Chrysene                             | ND        | 80,000       | ug/kg | BW846 B270          |
| Dibenso(a, h)enthracene              | NID       | 80,000       | ug/kg | 8W846 8270          |
| Dibensofuran                         | ND        | 80,000       | ug/kg | 8W846 8270          |
| Di-n-butyl phthelate                 | עא        | 80,000       | ug/kg | 8 <b>W846</b> B270  |
| 1,2-Dichlorobenzene                  | ИĎ        | BO,000       | ug/kg | SW846 8270          |
| 1,3-Dichlorobensene                  | <b>MD</b> | 80,000       | ug/kg | 8W846 8270          |
| 1,4-Dichlorobensene                  | MD        | 80,000       | ug/kg | 8W846 8270          |
| 3,3'-Dichlorobensidine               | CTM       | 160,000      | ug/kg | 6¥846 8270          |
| Diethyl phthalate                    | MD:       | 80,000       | ug/kg | BW846 8370          |
| Dimethyl phthalate                   | מא        | 80,000       | ug/kg | 5W846 8270          |
| 2,4-Dinitrotoluene                   | ND        | 80,000       | ug/kg | 8W846 8270          |
| 2,6-Dinitrotoluene                   | מא        | 80,000       | ug/kg | BW846 8270          |
| Di-n-octyl phthalate                 | ND        | 80,000       | ug/kg | \$W848 8270         |
| Fluoranthene                         | MD        | 80,000       | ug/kg | 8 <b>4848 827</b> 0 |
| Fluorene                             | ND        | 80,000       | ug/kg | SW846 8270          |
| Hexachlorobenzene                    | ND OR     | 000,08       | ug/kg | SW846 8270          |
| Hexachlorobutadiene                  | MD        | 80,000       | ug/kg | 8W846 8270          |
| Hexachlorocyclopentadiene            | מא        | 80,000       | ug/kg | 9W846 827Q          |
| Hexachlorosthane                     | MD        | 80,000       | ug/kg | SW846 8270          |
| Indeno(1,2,3-cd)pyrene               | מא        | 80,000       | ug/kg | <b>8W848 827</b> 0  |
| 1sophorone                           | מא        | 80,000       | ug/kg | SW846 8270          |
| 2-Methylmaphthalene                  | 14,000 J  | 80,000       | ug/kg | 5¥846 8270          |
| Naphthalene                          | ИD        | 80,000       | ug/kg | 5W846 8270          |
| Nitrobenzene                         | ₹D        |              | ug/kg | SW846 8270          |
| 2-Nitroaniline                       | סדא       |              | ug/kg | SW846 8270          |
| 3-Nitrosniline                       | ND        |              | ug/kg | SW846 8270          |
| 4-Nitroaniline                       | מא        |              | ug/kg | SW846 8270          |
| N-Nitrosodiphenylamine               | ND        |              | ug/kg | 84846 8270          |
| N-Nitrosodi-n-propylamine            | ИĎ        | 8D,000       | ug/kg | SW848 8270          |

| Phonanthrone            | ИD      | 80.000        | ug/kg | 8W846 827          | 0 |
|-------------------------|---------|---------------|-------|--------------------|---|
| Pyrene                  | 9,800 J | 80,000        | ug/kg | 8¥846 827          | Q |
| 1,2,4-frichlorobensene  | מא      | 80,000        | ug/kg | SW846 827          | 0 |
| 4-Chloro-3-methylphenol | ND)     | 80,000        | ug/kg | 9¥846 827          | Q |
| 2-Chlorophenol          | קא      | 80,000        | us/ks | SW846 827          | 0 |
| 2,4-Dichlorophenol      | dk      | 80,000        | UE/kg | SN846 827          | 0 |
| 2,4-Dimethylphenol      | ND      | BO,000        | ug/kg | 8W846 827          | Ò |
| 2,4-Dinitrophenol       | RD      | 400,000       | us/kg | 8¥846 827          | Q |
| 4.6-Dinitro-            | RD      | 400,000       | ug/kg | 54846 827          | ٥ |
| 2-methylphenol          |         | •             |       |                    |   |
| 2-Methylphenol          | KD      | 80,000        | ug/kg | BW646 827          | 0 |
| 4-Methylphenol          | ND      | 80,000        | ug/kg | EWB46 927          | 0 |
| 2-Witrophenol           | MD      | <b>80,000</b> | ug/kg | 8W846 627          |   |
| 4-Nitrophenol           | ND      | 400,000       | ug/kg | 8 <b>4</b> 846 627 | Ù |
| Pentachlorophenol       | KID.    | 400,000       | ug/kg | SW846 887          |   |
| Phenol                  | ND      | BO,000        | ug/kg | BW846 827          | Ĵ |
| 2,4,5-Trichlorophenol   | מא      | 80,000        | ug/kg | SY846 827          | ٥ |
| 2.4.6-Trichlorophenol   | ND      | 90,000        | ug/kg | 84846 827          | Q |

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# WADSWORTH ALERT LABORATORIES PRELIMINARY DATA SUMMARY A21170043 HATCHES SAYES HOVE VALLEY

PAGE

|     |                           |           | REPORTING |       |                    |
|-----|---------------------------|-----------|-----------|-------|--------------------|
|     | PARAMETER                 | RESULT    | _LIMIT_   | UNIT  | METHOD             |
| TCL | Volatile Organics         |           |           |       |                    |
|     | Chloromethane             | ND        | 120,000   | ug/kg | 9W840 8240         |
|     | Bromomethane              | ND        | 120,000   | us/ks | BY846 8840         |
|     | Vinyl chloride            | MTD CTM   | 120,000   | ug/kg | BW846 8240         |
|     | Chloroethane              | ND        | 120,000   | ug/kg | BWB40 8240         |
|     | Methylene obloride        | ND        | 62,000    | AE/KE | 8¥848 9240         |
|     | Agetone                   | ALD.      | 620,000   | ug/kg | BY848 8340         |
|     | Carbon disulfide          | КD        | 62,000    | ug/kg | 84846 8240         |
|     | 1, 1-Dichlorosthene .     | ND        | 62,000    | ug/kg | 8W848 8240         |
|     | 1.1-Dichlorgethane        | MD        | 62,000    | ug/kg | SW846 8240         |
|     | 1,2-Dichloroethene, Total | КD        | 62,000    | ug/kg | 8¥846 8240         |
|     | Chloroform                | КD        | 62,000    | ug/kg | 8¥846 8240         |
|     | 1,2-Dichloroethane        | מא        | 62,000    | nt/kt | 84846 8340         |
|     | 2-Butanone                | ND        | 620,000   | ug/kg | BW846 8240         |
|     | 1,1,1-Trichloroethane TCA | 170,000   | 82,000    | ug/kg | BW846 8240         |
|     | Carbon tetrachloride      | KD        | 62,000    | ug/kg | 8W846 8240         |
|     | Brosedichloromethane      | ND D      | 62,000    | ug/kg | 5W848 8240         |
|     | 1.Z-Dichloropropane       | מא        | 62,000    | ug/kg | 8x846 8240         |
|     | dis-1,3-Dichloropropene   | ND        | 62,000    | ug/kg | BY848 8240         |
|     | Trichlorosthene           | סא        | 62,000    | ug/kg | 84810 8310         |
|     | Dibrosophlorogethane      | ND        | 62,000    | ug/kg | 8¥846 8240         |
|     | 1,1,2-Triphloroethane     | ND        | 62,000    | ug/kg | BW846 B240         |
|     | Bensene                   | ND        | 62,000    | ug/kg | 8WB46 8340         |
|     | trans-1,3-Dichloropropens | HD        | 62,000    | ug/kg | 8W846 8240         |
|     | Bronoform                 | ND        | 62,000    | ug/kg | <b>54846</b> \$240 |
|     | 4-Methyl-2-pentanone      | ND        | 620,000   | ug/kg | 5W846 B240         |
|     | 2-Hexanone _              | מא        | 620,000   | ug/kg | 84646 <b>8</b> 340 |
|     | Tetrachloroethene PCE     | 1,800,000 | 62,000    | ug/kg | SW848 8240         |
|     | Toluene                   | ND        | 82,000    | us/ks | \$W846 8240        |
|     | 1,1,2,2-Tetrachloroethane | ND        | 62,000    | ug/kg | 9 <b>4846</b> 8240 |
|     | Chlorobenzene             | ND        | 62,000    | ug/kg | 9WB46 8240         |
|     | Ethylbenzene              | סא        | 62,000    | ug/kg | 8W846 8240         |
|     | Styrene                   | מא        | 62,000    | ug/kg | 8 <b>4846</b> 8240 |
|     | Xylenes, Total            | 36,000 J  | 62,000    | ug/kg | 8W846 8240         |
|     | Ultaid) tame              | -         |           |       |                    |

4-7.4

# 1351, 1352 & 1353 PILOT AREA (LIQUID LAYER ONLY) 9-18-92 5:00

|     | U-1-643 - A-4-4-          |            |            |               | •                   |
|-----|---------------------------|------------|------------|---------------|---------------------|
| TCL | Volatile Organica         | ND         | 2,000      | ug/L          | SW846 8240          |
|     | Chloromethane             |            | 2,000      | ug/L          | 8W846 8240          |
|     | Bromomethane              | מא         |            |               | 8V846 8240          |
|     | Vinyl chloride            | ND ·       | 2,000      | og/L          | 6W848 8340          |
|     | Chlorosthane              | #TD        | 2,000      | ug/L          |                     |
|     | Methylene ahloride        | ND         | 1,000      | ug/L          | 8¥846 8240          |
|     | Acetone                   | 3,400 J    | 10,000     | ug/L          | SW846 8240          |
|     | Carbon disulfide          | MD         | 1,000      | ug/L          | 9X945 8240          |
|     | 1,1-Dichloroethene        | 1,400      | 1,000      | ug/L          | BW846 8240          |
|     | 1.1-Dichlorosthane        | DCA 1,800  | 1,000      | ug/L          | BW846 8240          |
|     | 1.2-Dichloroethene. Total | DCE 24,000 | 1,000      | ug/L          | SW846 8240          |
|     | Chloroform                | 1,400      | 1,000      | u <b>g/</b> L | SW848 8240          |
|     | 1,2-Dichloroethane        | ND         | 1,000      | ひま/し          | 8W846 8240          |
|     | 2-Butanone                | 6,900 J    | 10,000     | ug/L          | 64846 8240          |
|     | 4-Chloro-3-methylphenol   | HD         | <b>300</b> | ug/L          | 8W848 B270          |
|     | 2-Chlorophenol            | ND         | 200        | ug/L          | BW848 8270          |
|     | 2,4-Dichlorophenol        | מא         | 200        | ug/L          | 8W846 8270          |
|     | 2,4-Dimethylphenol        | ИD         | 200        | ug/L          | \$4848 <b>8</b> 270 |
|     | 2,4-Dinitrophenol         | מא         | 1,100      | Eg/L          | 8N846 B270          |
|     | 4,8-Dinitro-              | מא         | 1,100      | ug/L          | ew846 9270          |
|     | 2-methylphenol            | -          | -          | _             | •                   |
|     | 2-Methylphenol            | ND         | 500        | սց/Ն          | 84846 8270          |
|     | 4-Methylphenol            | ND         | 200        | ug/L          | AW846 B270          |
|     | 2-Nitrophenol             | ND         | 200        | ug/L          | 54846 8270          |
|     |                           | ND         | 1,100      | ug/L          | 84845 B270          |
|     | 4-Nitrophenol             | סא         | 1,100      | ug/L          | 5¥546 \$270         |
|     | Pentschlorophenol         | ND         | 200        | սց/Ն          | SW848 8270          |
|     | Phenol                    | סא         | 200        | ug/L          | 8W845 8270          |
|     | 2,4,5-Trichlorophenol     |            | 200        | ug/L          | 8W848 8270          |
|     | 2,4,5-Trichlorophenol     | סא         | 244        | - B/ -        | A +4                |

P.6/7

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# WADSWORTH ALERT LABORATORIES PRELIMINARY DATA SUMMARY AMINOUS

HATCHER SAYEE HOWE VALLEY

PAGE

|                              |             | REPORTING    |               |                     |
|------------------------------|-------------|--------------|---------------|---------------------|
| PARAMETER                    | RESULT      | LIMIT        | UNIT          | METHOD              |
| TCL Semivolatile Organics    |             |              |               |                     |
| Agenaphthene                 | ХФ          | 200          | UE/L          | 8W846 8270          |
| Acenephthylene               | ИĎ          | 200          | ue/L          | SW846 8270          |
| Anthracene                   | MD          | 20D          | US/L          | SW846 8270          |
| Benso(a)anthracene           | MD          | 200          | ug/L          | <b>81846</b> 8270   |
| Benzo(b) fluoranthene        | ND          | 200          | Dg/L          | SW846 8270          |
| Benso(k) (luoranthene        | ND          | 200          | ug/L          | BW846 8270          |
| Benso(ghi)perylene           | ND          | 200          | ug/L          | EV846 8270          |
| Benso(a)pyrene               | מא          | 200          | ug/L          | 8 <b>4846</b> 8270  |
| Bis(2-chloroethoxy)asthane   | ad          | 200          | ug/L          | gw <b>846 82</b> 70 |
| Bis(2-ohloroethyl)ether      | ĦĎ          | 200          | ug/L          | EW846 8270          |
| 2,2'-oxybis(1-Chloropropane) | ND          | 200          | ug/L          | 8X846 8270          |
| Bis(2-sthylhexyl)phthalate   | ND          | 200          | ug/L          | 8W848 8270          |
| 4-Bromophenyl phenyl ether   | ND          | 200          | ug/L          | <b>8W848 \$2</b> 70 |
| Butyl benzyl phthalate       | <b>(17)</b> | 200          | ug/L          | <b>SW848</b> 8270   |
| Carbacole                    | MD          | 200          | ug/L          | 84846 8270          |
| 4-Chloroaniline              | KD<br>KD    | 200          | ug/L          | 8W846 8270          |
| 2-Chloronephthalene          | ND          | 200          | UE/L          | 8W846 8270          |
| 4-Chlorophenyl phenyl ether  | KD          | 200          | ug/L          | BW846 8270          |
| ·                            | KD          | 200          | ug/L          | 8W846 8270          |
| Chrysene                     | ND          | 200          | ug/L          | 8¥848 8170          |
| Dibenzo(s, h) anthrecene     | ND          | 200          | ug/L          | 84846 827D          |
| Dibensofuran                 | ND<br>CK    | 200          | ug/L          | 89845 8270          |
| Di-m-butyl phthelate         | ND<br>DK    | 200          | ug/L          | 8W846 8270          |
| 1,2-Dichlorobensene          | ND<br>ND    | 200          | ug/L          | 89846 8270          |
| 1,3-Diohlorobensene          |             | 200          | ug/L          | SWB46 8210          |
| 1,4-Dichlorobensone          | D CIN       | 440          | ug/L          | 8W846 8270          |
| 3,3'-Dichlorobensidine       | HD          |              | ug/L          | 8W846 8270          |
| Diethyl phthalate            | ND          | 200          |               | 8 <b>4848 827</b> 0 |
| Disethyl phthalate           | HD          | 200          | ug/L          | 8H846 8270          |
| 2,4-Dinitrotoluene           | HD          | 200          | TE/L          | gy846 8270          |
| 2,6-Dimitrotoluene           | KD.         | 200          | ug/L          | EX846 8370          |
| Di-n-octyl phthalate         | Й           | 200          | ug/L          |                     |
| Fluoranthene                 | RD.         | 300          | ug/L          | 6W246 8210          |
| Fluorene                     | סא          | 200          | ug/L          | 8W846 B270          |
| Hexachlorobensene            | ND          | 200          | սք/Ն          | EW846 8270          |
| Hexachlorobutadiene          | MD          | 200          | ug/L          | BW845 8270          |
| Hexachlorocyclopentadiane    | <b>CDK</b>  | 200          | ug/L          | 64846 8370          |
| Hexachlorosthans             | ŔD          | 200          | ug/L          | 5¥846 B270          |
| Indeno(1,2,3-od)pyrene       | MD          | 200          | ug/L          | 3W846 8270          |
| Isophorone                   | ŔΤD         | 200          | ug/L          | 84846 8 <b>2</b> 70 |
| 2-Methylnsphthalene          | סא          | 200          | u <b>g/</b> L | 8W848 8270          |
| Naphthelene                  | מא          | 200          | ug/L          | <b>SV846</b> 8270   |
| Nitrobensens                 | ИÐ          | 200          | ug/L          | 5 <b>4846 82</b> 70 |
| 2-Nitroaniline               | ND          | 1,100        | Ug/L          | 8W846 8370          |
| 3-Nitrosniline               | ND          | 1,100        | ug/L          | 84846 8270          |
| 4-Nitrosniline               | ИD          | 1,100        | ug/L          | 8W846 8270          |
| N-Nitrogodiphenylamine       | סא          | 200          | ug/L          | 8 <b>48</b> 46 8270 |
| H-Hitrosodi-n-propylesine    | ND          | 200          | ug/L          | 9N846 8Z70          |
| Phenanthrene                 | מא          | 200          | Ug/L          | SW846 8270          |
| Pyrene                       | иD          | 200          | ug/L          | SW846 8270          |
| 1,2,4-Trichlorobensens       | ИD          | 200          | ug/L          | 5W846 8270          |
| 11041_TY TANKER Additional   | -1-         | <del>-</del> | <b>-</b> -    | • •                 |

| 4-Chloro-3-methylphenol | RĎ | 200        | ug/L   | 94846 B270          |
|-------------------------|----|------------|--------|---------------------|
| 2-Chlorophenol          | KD | 200        | ug/L   | 84848 8270          |
| 2.4-Dichlorophenol      | D  | 200        | ug/L   | 24848 <b>93</b> 70  |
| 2.4-Dimethylphenol      | RD | 200        | ug/L   | BW846 8270          |
| 2,4-Dinitrophenol       | מא | 1,100      | ug/L   | 8 <b>484</b> 6 8970 |
| 4.6-Dinitro             | ND | 1,100      | ug/L   | BW846 8270          |
| 2-mathylphenol          |    |            |        |                     |
| 2-Methylphenol          | ND | <b>200</b> | ug/L · | 8¥846 8270          |
| 4-Methylphenol          | ND | 200        | ug/L   | 84846 8270          |
| 2-Nitrophenol           | מא | 200        | ug/L   | 84848 8270          |
| 4-Nitrophenol           | KD | 1,100      | ug/L   | <b>84848 8270</b>   |
| Pentachlorophenol       | ND | 1,100      | ug/L   | SWB48 8370          |
| Phenol                  | ND | 200        | ug/L   | 84848 8370          |
| 2,4,5-Trichlorophenol   | מא | 200        | ug/L   | 84848 8270          |
| 2,4,6-Trichlorophenol   | ND | 200        | ug/L   | BW846 8270          |





September 25, 1992

Mr. Nestor Young Remedial Project Manager U.S. EPA, Region IV 345 Courtland St. NE. Atlanta, GA. 30365

> Re: Howe Valley Landfill Hardin County, Kentucky Prefinal Organic Design Plan Job No. 0064-001

Dear Mr. Young:

Enclosed are six (6) copies of the Intermediate/Prefinal Organic Design Plan. Comments received on the Inorganic Design Plan have been incorporated into this revised plan. As per our earlier discussions, we have held off submitting this document until receiving data from our Pilot Study. The preliminary results of the Pilot Study have just been received and indicate the planned operation will be successful. A synopsis of the Pilot Study is attached to this letter.

The Organic Design Plan will remain essentially as is contained in the plan. The only slight deviation will be that the diversion ditches had to be field altered slightly because of encountering bedrock and the drums. As discussed, technical memoranda will be submitted for the drum and "unknown semi-solid" material discovered at the site.

If you have any questions, please give me a call.

Sincerely, HATCHER-SAYRE, INC.

James D. Knauss, Ph.D.

Project Manager

attachments

cc: Jim Mersereau-Kempf w/o
Ed Ovsenik, Esq. w/o

Carroll Coogle w/o

JDK/bh

# HOWE VALLEY LANDFILL HARDIN COUNTY, KENTUCKY PILOT TREATABILITY STUDY PRELIMINARY RESULTS

The Pilot Study excavation and aeration was initiated on September 14 and 15, 1992, respectively. The soil utilized for the study was obtained from the southern portion of Area 1. This area contained drum lids and small containers (anomalous area located with the EM-31) and had soil headspace readings of greater than 1000 ppm. The soil was periodically rototilled for approximately 1 1/2 days until headspace analyses were continuously below 10 ppm. Five samples were collected from 50-foot centers to verify the VOCs of concern were volatilized. The attached results indicated that all five samples indicated that the VOC concentrations were not detected.

## WADSWORTH ALERT LABORATORIES PRELIMINARY DATA SUMMARY

A2I210005 HATCHER SAYRE HOWE VALLEY

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| PARAMETER                       | RESULT | REPORTING<br>LIMIT | UNIT                   | METHOD      |
|---------------------------------|--------|--------------------|------------------------|-------------|
| 1354 PILOT STUDY A 9-17-92 6:30 |        |                    |                        |             |
| Volatile Organics, GC/MS        |        |                    |                        |             |
| 1,1-Dichloroethane              | ND     | 1                  | mg/kg                  | SW846 8240  |
| 1,2-Dichloroethene, Total       | ND     |                    | mg/kg                  | SW846 8240  |
| Tetrachloroethene               | ND     | 1                  | mg/kg                  | 5W846 8240  |
| 1,1,1-Trichloroethane           | ND     | 1                  | mg/kg                  | SW846 8240  |
| Inorganic Analysis              |        | •                  |                        | Dioto cato  |
| Solids, Total (TS)              | 90     | 0.5                | x                      | USEPA 160.3 |
| 1355 PILOT STUDY B 9-17-92 6:30 |        |                    |                        |             |
| Inorganic Analysis              |        |                    |                        |             |
| Solids, Total (TS)              | 85     | 0.5                | X                      | USEPA 160.3 |
| Volatile Organics, GC/MS        |        |                    |                        |             |
| 1,1-Dichloroethane              | ND     | 1                  | ng/kg                  | SW846 8240  |
| 1,2-Dichloroethene, Total       | ND     | ī                  | mg/kg                  | SW846 8240  |
| Tetrachloroethene               | ND     | ī                  | mg/kg                  | SW846 8240  |
| 1,1,1-Trichloroethane           | ND     | ī                  | mg/kg                  | SW846 8240  |
| 1356 PILOT STUDY C 9-17-92 6:30 |        |                    |                        |             |
| Inorganic Analysis              |        |                    |                        |             |
| Solids, Total (TS)              | 87     | 0.5                | <b>X</b> .             | USEPA 160.3 |
| Volatile Organics, GC/MS        |        |                    |                        |             |
| 1,1-Dichloroethane              | ND     | 1                  | mg/kg                  | SW846 8240  |
| 1,2-Dichloroethene, Total       | ND     | ī                  | mg/kg                  | SW846 8240  |
| Tetrachloroethene               | ND     | ī                  | mg/kg                  | SW846 8240  |
| 1,1,1-Trichloroethane           | ND     | ī                  | mg/kg                  | 9W846 8240  |
|                                 | 112    | •                  | ₩ <b>8</b> / <b>Δ9</b> | 511040 0240 |
| 1357 PILOT STUDY D 9-17-92 6:30 |        |                    |                        |             |
| Inorganic Analysis              |        |                    |                        |             |
| Solids, Total (TS)              | 85     | 0.5                | ×                      | USEPA 160.3 |
| Volatile Organics, GC/MS        |        |                    |                        |             |
| 1,1-Dichloroethane              | ND     | 1                  | ng/kg                  | SW846 8240  |
| 1,2-Dichloroethene, Total       | ND     | ī                  | mg/kg                  | SW846 8240  |
| Tetrachloroethene               | ND     | ī                  | mg/kg                  | SW846 8240  |
| 1,1,1-Trichloroethane           | ND -   | ī                  | mg/kg                  | 5W846 8240  |
| 1358 PILOT STUDY E 9-17-92 6:30 |        |                    |                        | ·           |
| Inorganic Analysis              |        |                    |                        | ·           |
| Solids, Total (TS)              | 89     | 0.5                | %                      | USEPA 160.3 |

## WADSWORTH ALERT LABORATORIES PRELIMINARY DATA SUMMARY

A2I210005 HATCHER SAYRE HOWE VALLEY

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|        | REPORTING            |  |            |
|--------|----------------------|--|------------|
| RESULT | LIMIT                | UNIT   | METHOD     |
|        |                      |  |            |
| ND     | 1                    | mg/kg  | SW846 8240 |
| ND     | 1                    | mg/kg  | SW846 8240 |
| ND     | 1                    | mg/kg  | SW846 8240 |
| ND     | 1                    | mg/kg  | SW846 8240 |
|        |                      |  |            |
|        |                      |  |            |
| ND     | 5                    | ug/L   | SW846 8240 |
| ND     | 5                    | ug/L   | SW846 8240 |
| ND     | 5                    | ug/L   | SW846 8240 |
| ND     | 5                    | ug/L   | SW846 8240 |
|        | ND<br>ND<br>ND<br>ND | RESULT LIMIT  ND 1  ND 1  ND 1  ND 1  ND 5  ND 5 | RESULT     |

#### TECHNICAL MEMORANDUM

ATLANTA, GA

Date: September 23, 1992

Nestor Young, Remedial Project Manager

U.S. EPA, Region IV Atlanta, Georgia

James D. Knauss, Ph.D. Project Manager From:

Hatcher-Sayre, Inc. Lexington, Kentucky

Howe Valley Landfill, Hardin County, Kentucky

Discovery of Drums

As reported to EPA last week, in preparation for implementation of the Organic Pilot Treatability Study, construction of a drainage ditch to control precipitation run-on uncovered two upright intact drums. These drums, located at approximately 14H on the site grid system, appeared to contain either solid silicone or paint sludge covered with several inches of water. The PID meter readings at the drum openings were only Upon discovery, the Field Supervisor immediately about 40 ppm. shut down further operations and initiated decontamination of the equipment. Hatcher-Sayre, Inc.'s Project Manager was notified and he, in turn, notified Dow Corning. Arrangements were made to ship an Electromagnetic (EM) Terrain Conductivity Meter to the Site to investigate the possibility of additional drums.

The purpose of this technical memorandum, therefore, is to describe the procedures which will be followed to investigate and then to handle any drums which are found at the Site. The following sections describe these procedures.

In phase or out of phase? Contour program? Surfer? EM SURVEY General

Geophysical equipment can be used to screen a site in a short period of time with fairly accurate results. All geophysical equipment used during the study will be calibrated according to the manufacturer's calibration procedures included with the instrument. Information will be recorded in a field book as to the date and times calibrated, team members and a complete chronological description of what transpired during the study.

This survey will utilize an EM-31D Noncontacting Terrain Conductivity Meter. A transmitter induced coil directs induced current loops into the ground, which produce secondary fields. These secondary fields are then sensed or detected by the receiver coil, and then amplified and stored on a strip chart recorder or magtape, if desired. 1 Ose multiple instruments for coophysics- prosporation etc.

and should be anchored with points)

EM instruments measure true soil conductivity in uniform, homogeneous subsurface conditions. EM units also measure apparent soil conductivity in layered soil. Measurements can be obtained from depths of 10 feet to over 50 feet with these instruments. EM units are very effective for rapid site reconnaissance and detection of buried drums, pipes and metallic-type conductors. EMs are not limited by frozen ground, or wet or dry soils.

#### Specific Equipment Quality Control Procedures

The EM-31D will be calibrated in accordance with the manufacturer's specified calibration procedures and will only be calibrated by personnel that have been trained to do so. The calibration will be checked periodically to insure accurate readings, especially on re-entering the study area after having left for a period of time. All calibration procedures and pertinent information will be documented in the field logbook. Personnel using the geophysical equipment will be trained in the use and maintenance of such equipment and will be able to interpret and present the gathered data in an easily understood manner in charts, graphs, maps and formal reports.

#### EM-31 Assembly And Calibration Procedures

- Align and connect transmitter tube to control box.
- Check batteries by setting mode switch to operate position and range switch to +B position and then to -B position. The needle should read in the battery mark. If not, replace batteries.
- · Align and connect receiver tube to control box.
- · Set range switch to 30 millimhos/meter position.
- · Set mode switch to comp. position.
- · Adjust meter to zero using coarse and fine comp. controls.
- Check phasing, set mode switch to phase position.
- Note meter reading.
- Rotate coarse control to original position. No further adjustments are needed.
- If there is a difference in meter readings, an adjustment is needed.
- Put coarse control in original position.
- Rotate phase potentiometer 1/4 turn clockwise and note meter reading.

- Rotate coarse control one step clockwise and note meter reading.
- If meter reading does not change, no further adjustment is needed. Return coarse control to original position.
- If meter reading changes, repeat above adjustments until meter reading remains the same when coarse control is rotated one step clockwise.
- Meter should read between 75 85 percent of full scale (in Black Mark).
- · Return coarse control to original position.
- · EM-31 is ready for operation.

Note: When calibrating the EM-31 over ground with higher conductivity than 30 millimhos/meter, the range switch should be set at the appropriate range level.

#### EM-31 Operating Procedure - Measuring Soil Conductivity

- · Establish a grid on 10-foot centers throughout the Site.
- Adjust the shoulder strap so that the instrument rests comfortably on the hip.
- Switch the mode switch to OPER position and rotate range switch so that meter reads in upper 2/3 of the scale.
- EM-31 can be operated continuously while moving from one point to next measurement point to conduct next measurement.
- · Record readings on field survey forms.
- · Analyze data for any anomalies.
- Mark (flag) areas which produced the anomalies.

Areas indicating anomalies will be investigated with a backhoe or trackhoe containing a nonsparking bucket. Layers of soil will be gradually and carefully removed to reveal the object(s) responsible for the anomaly. If drums are discovered, then procedures discussed in the next section should be implemented.

#### DRUM HANDLING

#### Drum Removal

Drum removal and characterization tasks include excavation, staging, storage, sampling, compatibility determination and waste consolidation or bulking. Drums will be excavated and removed to staging areas using trackhoes, drum grapplers, backhoes, loaders and hand labor as needed using nonsparking equipment. Adequate

quantities of repacking materials will be available on-site as needed. Each drum will be stored and number coded at the plasticlined staging area. A log sheet will be prepared for each drum that documents the volume and physical characteristics of its contents.

Staging for drum opening and sampling will occur near each excavation area and the drums will then either be directly bulked from this initial staging location or relocated to a central storage area for waste consolidation. As major waste types are identified, representative samples will be prepared and transported to Wadsworth/Alert's laboratory in North Canton, Ohio for waste profile analyses to support the evaluation of disposal options.

Specific Quality Control Procedures of Waste Characterization Sampling Equipment

All major sampling and safety equipment used during investigations at the Site, including barrel openers, safety equipment (other than disposable gear), explosion meters, cameras, etc., will be numbered so that this equipment can be traced through field records. A logbook will be established for this equipment, so that all cleaning, maintenance and repair procedures can be traced to the person performing such procedures and to specific repairs made. All equipment will be tested before being issued for field studies.

### Open And Closed Container Sampling

Sampling of closed containers (drums, barrels, tanks) should only be conducted when absolutely necessary. Whenever container sampling is necessary, the first processary. Sampling of closed containers (drums, barrels, tanks) should sampling is necessary, the first priority should be the collection of samples from open containers since they generally present a lower hazard level to the samplers than closed containers (i.e., volatile components have already evaporated, extreme acute toxicity would probably be evident from discolored vegetation around the Site, etc.). Closed containers must be considered as extremely hazardous from either the toxicity, explosion or fire standpoint. Chronic toxicity may be a danger in both open or closed containers.

> A problem which often arises in container sampling is stratification and/or phase separation of the container contents. When this condition occurs or is suspected, care will be taken so that the sample collected is representative of the container contents. If only one layer or phase is sampled, this should be noted and taken into account when interpreting analytical results. Where possible, samples will be composited with depth (i.e., collected throughout the entire depth of the container or at several different depths) to provide a representative sample.

#### Equipment

The following equipment is available for use in collecting waste samples from open and closed containers: a complete set of spark-proof tools including barrel bung wrenches, adjustable wrenches, etc.; a remote barrel opening device (backhoe spike);

glass tubes for liquid barrel sampling; and tongue depressors for

glass tubes for liqui solid waste sampling.

Sampling Technic

sparking metal spike attached to a backhoe arm which possesses an explosion shield for operator safety will be the primary drum opening device at the Howe Valley Site. Swollen drums will be punctured initially with a small hole to allow any gas to escape.

Liquid samples from drums or barrels will be collected using a 4-foot length of disposable glass tubing. Generally, glass tubes will have a 1/2-inch or less inside diameter. The tube is inserted into the opening of the drum or barrel as far as possible to hold the sample in the tube in the thumb to hold the sample in the tube in the tube in the sample in the tube in the sample in the tube in the sample in the samp

container. The sample is then placed in a glass container and the procedure is repeated until an adequate amount of sample is collected. Sample volume should be held to the absolute minimum required for analysis.

Other sampling procedures that include the use of automatic samplers, pumps, siphons, multiple valves and ports, etc., may be used depending on the specific container involved. These procedures should not be used unless it can be established that their use will not constitute a fire or explosion hazard. This determination will be made only after field reconnaissance, collection of appropriate field data (explosion meter, photo-ionizer, etc.) and consideration of available file information on the Site.

Solid samples from drums or barrels will be sampled with disposable tongue depressors. The surface material should be carefully moved to the side, if possible, so that the sample can be collected from lower "unexposed" material. Sample volume should be collected from lower "unexposed" material. Sample volume should be regulations governing the transportation of hazardous waste, drum containing hazardous waste removed from the Site will be overpacked, labeled and manifested prior to their shipment to the CERCLA-approved facilities.

Overpacking/Shipping Operations

The overpacking/shipping procedure will be as follows:

The overpacking/shipping procedure will be as follows:

Drums will be selected from the lined staging areas according to their contents (i.e., solid silicone, semi-solid silicone, liquid, etc.) and will be transported in the bucket of a

5

rubber-tired backhoe/loader.

- When several drums have been stored in the overpack area, overpacking procedures will begin.
- Each drum will be raised and rotated by the trackhoe/grappler and the drum number previously painted on the drum during removal operations recorded by a recover technician. The drum will then be placed into an overpack.
- The number of the overpacked drum will be painted on the outside of the overpack. Where possible, similar material will be consolidated into one overpack to facilitate handling and disposal. The drum lid, gasket and ring will then be secured on the drum.
- The trackhoe/grappler will then load the overpacks into the bucket of a rubber-tired backhoe/loader for transport to the shipping area.
- In the shipping area, the overpacks will be labeled with two required shipping labels. One is the hazardous waste label which identifies the DOT shipping name and the waste generator information and the other is a waste description label (i.e., flammable liquid, flammable solid, etc.). Additionally, the disposal facility identification number will be written on the lid and side of the overpack. This number will be used by the disposal facility to expedite their internal handling procedures for the waste.
- During the shipping operations, the overpacked drums will be loaded and transported, using the trackhoe/grappler and rubber-tired backhoe/loader to the concrete loading dock.
- The overpacks will be loaded into the tractor trailers of licensed hazardous waste haulers using a forklift. The overpacked drums will be reinspected for leaks, checked for proper labeling and manifested by recording the drum number and type of waste in each overpack before placement into the tractor trailers to ensure the waste will be sent to the appropriate disposal facility.
- Each tractor trailer driver will sign the proper manifest forms and maintain two copies in the vehicle. The proper placarding of the trailers will be checked prior to the departure of the tractor trailers from the Site.
- The Site office will maintain original copies of all manifests and send monthly waste summaries to the state agencies where the disposal facilities are located, as required.

The health and safety procedures to be followed during the overpacking/shipping operations will deviate slightly from those detailed in the Field Health and Safety Plan (HASP) for the Howe Valley Landfill. Following approval by the Site Health and Safety

Officer and EPA, overpacking operations will be conducted in Level B protection and shipping operations will be conducted in Level C, when personnel move closely within the area of the drums (labeling, inspection, etc.). Loading dock operations will be conducted in Level D protection. Air monitoring will be conducted using a PID meter regularly throughout the overpacking and shipping areas.

In all instances excuration of the soil surrounding the bunies drums will be completed. The soil should be stockpiled and sampled. If contaminated the soil must be treated or disposed of-

#### TECHNICAL MEMORANDUM

Date: September 23, 1992

To: Nestor Young, Remedial Project Manager

U.S. EPA, Region IV Atlanta, Georgia

From: James D. Knauss, Ph.D. Project Manager

Hatcher-Sayre, Inc. Lexington, Kentucky

Re: Howe Valley Landfill, Hardin County, Kentucky

Discovery of Drums

As reported to EPA last week, in preparation for the implementation of the Organic Pilot Treatability Study, the construction of a drainage ditch to control precipitation run-on uncovered two upright intact drums. These drums, located at approximately 14H on the site grid system, appeared to contain either solid silicone or paint sludge covered with several inches of water. The PID meter readings at the drum openings were only about 40 ppm. Upon discovery, the Field Supervisor immediately shut down further operations and initiated decontamination of the equipment. Hatcher-Sayre, Inc.'s Project Manager was notified and he, in turn, notified Dow Corning. Arrangements were made to ship an Electromagnetic (EM) Terrain Conductivity Meter to the Site to investigate the possibility of additional drums.

The purpose of this technical memorandum, therefore, is to describe the procedures which will be followed to investigate and then to handle any drums which are found at the Site. The following sections describe these procedures.

#### EM SURVEY

#### General

Geophysical equipment can be used to screen a site in a short period of time with fairly accurate results. All geophysical equipment used during the study will be calibrated according to the manufacturer's calibration procedures included with the instrument. Information will be recorded in a field book as to the date and times calibrated, team members and a complete chronological description of what transpired during the study.

This survey will utilize an EM-31D Noncontacting Terrain Conductivity Meter. A transmitter induced coil directs induced current loops into the ground, which produce secondary fields. These secondary fields are then sensed or detected by the receiver coil, and then amplified and stored on a strip chart recorder or magtape, if desired.

EM instruments measure true soil conductivity in uniform, homogeneous subsurface conditions. EM units also measure apparent soil conductivity in layered soil. Measurements can be obtained from depths of 10 feet to over 50 feet with these instruments. EM units are very effective for rapid site reconnaissance and detection of buried drums, pipes and metallic-type conductors. EMs are not limited by frozen ground, or wet or dry soils.

#### Specific Equipment Quality Control Procedures

The EM-31D will be calibrated in accordance with the manufacturer's specified calibration procedures and will only be calibrated by personnel that have been trained to do so. The calibration will be checked periodically to insure accurate readings, especially on re-entering the study area after having left for a period of time. All calibration procedures and pertinent information will be documented in the field logbook. Personnel using the geophysical equipment will be trained in the use and maintenance of such equipment and will be able to interpret and present the gathered data in an easily understood manner in charts, graphs, maps and formal reports.

#### EM-31 Assembly And Calibration Procedures

- · Align and connect transmitter tube to control box.
- Check batteries by setting mode switch to operate position and range switch to +B position and then to -B position. The needle should read in the battery mark. If not, replace batteries.
- · Align and connect receiver tube to control box.
- Set range switch to 30 millimhos/meter position.
- Set mode switch to comp. position.
- Adjust meter to zero using coarse and fine comp. controls.
- Check phasing, set mode switch to phase position.
- Note meter reading.
- Rotate coarse control to original position. No further adjustments are needed.
- If there is a difference in meter readings, an adjustment is needed.
- Put coarse control in original position.
- Rotate phase potentiometer 1/4 turn clockwise and note meter reading.

- Rotate coarse control one step clockwise and note meter reading.
- If meter reading does not change, no further adjustment is needed. Return coarse control to original position.
- If meter reading changes, repeat above adjustments until meter reading remains the same when coarse control is rotated one step clockwise.
- Meter should read between 75 85 percent of full scale (in Black Mark).
- · Return coarse control to original position.
- EM-31 is ready for operation.

Note: When calibrating the EM-31 over ground with higher conductivity than 30 millimhos/meter, the range switch should be set at the appropriate range level.

#### EM-31 Operating Procedure - Measuring Soil Conductivity

- · Establish a grid on 10-foot centers throughout the Site.
- Adjust the shoulder strap so that the instrument rests comfortably on the hip.
- Switch the mode switch to OPER position and rotate range switch so that meter reads in upper 2/3 of the scale.
- EM-31 can be operated continuously while moving from one point to next measurement point to conduct next measurement.
- Record readings on field survey forms.
- Analyze data for any anomalies.
- · Mark (flag) areas which produced the anomalies.

Areas indicating anomalies will be investigated with a backhoe or trackhoe containing a nonsparking bucket. Layers of soil will be gradually and carefully removed to reveal the object(s) responsible for the anomaly. If drums are discovered, then procedures discussed in the next section should be implemented.

#### DRUM HANDLING

#### Drum Removal

Drum removal and characterization tasks include excavation, staging, storage, sampling, compatibility determination and waste consolidation or bulking. Drums will be excavated and removed to staging areas using trackhoes, drum grapplers, backhoes, loaders and hand labor as needed using nonsparking equipment. Adequate

quantities of repacking materials will be available on-site as needed. Each drum will be stored and number coded at the plastic-lined staging area. A log sheet will be prepared for each drum that documents the volume and physical characteristics of its contents.

Staging for drum opening and sampling will occur near each excavation area and the drums will then either be directly bulked from this initial staging location or relocated to a central storage area for waste consolidation. As major waste types are identified, representative samples will be prepared and transported to Wadsworth/Alert's laboratory in North Canton, Ohio for waste profile analyses to support the evaluation of disposal options.

## <u>Specific Quality Control Procedures of Waste Characterization</u> <u>Sampling Equipment</u>

All major sampling and safety equipment used during investigations at the Site, including barrel openers, safety equipment (other than disposable gear), explosion meters, cameras, etc., will be numbered so that this equipment can be traced through field records. A logbook will be established for this equipment, so that all cleaning, maintenance and repair procedures can be traced to the person performing such procedures and to specific repairs made. All equipment will be tested before being issued for field studies.

#### Open And Closed Container Sampling

Sampling of closed containers (drums, barrels, tanks) should only be conducted when absolutely necessary. Whenever container sampling is necessary, the first priority should be the collection of samples from open containers since they generally present a lower hazard level to the samplers than closed containers (i.e., volatile components have already evaporated, extreme acute toxicity would probably be evident from discolored vegetation around the Site, etc.). Closed containers must be considered as extremely hazardous from either the toxicity, explosion or fire standpoint. Chronic toxicity may be a danger in both open or closed containers.

A problem which often arises in container sampling is stratification and/or phase separation of the container contents. When this condition occurs or is suspected, care will be taken so that the sample collected is representative of the container contents. If only one layer or phase is sampled, this should be noted and taken into account when interpreting analytical results. Where possible, samples will be composited with depth (i.e., collected throughout the entire depth of the container or at several different depths) to provide a representative sample.

#### Equipment

The following equipment is available for use in collecting waste samples from open and closed containers: a complete set of spark-proof tools including barrel bung wrenches, adjustable wrenches, etc.; a remote barrel opening device (backhoe spike);

glass tubes for liquid barrel sampling; and tongue depressors for solid waste sampling.

#### Sampling Techniques

Closed drums, barrels or other containers (including storage tanks) containing unknown materials or known hazardous materials will be opened using only spark-proof opening devices. A non-sparking metal spike attached to a backhoe arm which possesses an explosion shield for operator safety will be the primary drum opening device at the Howe Valley Site. Swollen drums will be punctured initially with a small hole to allow any gas to escape.

Liquid samples from drums or barrels will be collected using a 4-foot length of disposable glass tubing. Generally, glass tubes will have a 1/2-inch or less inside diameter. The tube is inserted into the opening of the drum or barrel as far as possible. The open end is then sealed either with the thumb or a rubber stopper to hold the sample in the tube while removing the tube from the container. The sample is then placed in a glass container and the procedure is repeated until an adequate amount of sample is collected. Sample volume should be held to the absolute minimum required for analysis.

Other sampling procedures that include the use of automatic samplers, pumps, siphons, multiple valves and ports, etc., may be used depending on the specific container involved. These procedures should not be used unless it can be established that their use will not constitute a fire or explosion hazard. This determination will be made only after field reconnaissance, collection of appropriate field data (explosion meter, photoionizer, etc.) and consideration of available file information on the Site.

Solid samples from drums or barrels will be sampled with disposable tongue depressors. The surface material should be carefully moved to the side, if possible, so that the sample can be collected from lower "unexposed" material. Sample volume should be only the minimum required for analysis.

#### WASTE DISPOSAL ACTIVITIES

In order to satisfy the Department of Transportation (DOT) regulations governing the transportation of hazardous waste, drums containing hazardous waste removed from the Site will be overpacked, labeled and manifested prior to their shipment to the CERCLA-approved facilities.

#### Overpacking/Shipping Operations

The overpacking/shipping procedure will be as follows:

 Drums will be selected from the lined staging areas according to their contents (i.e., solid silicone, semi-solid silicone, liquid, etc.) and will be transported in the bucket of a rubber-tired backhoe/loader.

- When several drums have been stored in the overpack area, overpacking procedures will begin.
- Each drum will be raised and rotated by the trackhoe/grappler and the drum number previously painted on the drum during removal operations recorded by a recover technician. The drum will then be placed into an overpack.
- The number of the overpacked drum will be painted on the outside of the overpack. Where possible, similar material will be consolidated into one overpack to facilitate handling and disposal. The drum lid, gasket and ring will then be secured on the drum.
- The trackhoe/grappler will then load the overpacks into the bucket of a rubber-tired backhoe/loader for transport to the shipping area.
- In the shipping area, the overpacks will be labeled with two required shipping labels. One is the hazardous waste label which identifies the DOT shipping name and the waste generator information and the other is a waste description label (i.e., flammable liquid, flammable solid, etc.). Additionally, the disposal facility identification number will be written on the lid and side of the overpack. This number will be used by the disposal facility to expedite their internal handling procedures for the waste.
- During the shipping operations, the overpacked drums will be loaded and transported, using the trackhoe/grappler and rubber-tired backhoe/loader to the concrete loading dock.
- The overpacks will be loaded into the tractor trailers of licensed hazardous waste haulers using a forklift. The overpacked drums will be reinspected for leaks, checked for proper labeling and manifested by recording the drum number and type of waste in each overpack before placement into the tractor trailers to ensure the waste will be sent to the appropriate disposal facility.
- Each tractor trailer driver will sign the proper manifest forms and maintain two copies in the vehicle. The proper placarding of the trailers will be checked prior to the departure of the tractor trailers from the Site.
- The Site office will maintain original copies of all manifests and send monthly waste summaries to the state agencies where the disposal facilities are located, as required.

The health and safety procedures to be followed during the overpacking/shipping operations will deviate slightly from those detailed in the Field Health and Safety Plan (HASP) for the Howe Valley Landfill. Following approval by the Site Health and Safety

Officer and EPA, overpacking operations will be conducted in Level B protection and shipping operations will be conducted in Level C, when personnel move closely within the area of the drums (labeling, inspection, etc.). Loading dock operations will be conducted in Level D protection. Air monitoring will be conducted using a PID meter regularly throughout the overpacking and shipping areas.

#### TECHNICAL MEMORANDUM

Date: September 21, 1992

To: Nestor Young, Remedial Project Manager

U.S. EPA, Region IV, Atlanta, GA

From: Jim Knauss, Ph.D., Project Manager

Hatcher-Sayre, Inc., Lexington, KY

Re: Howe Valley Landfill, Hardin County, KY

INORGANIC SOIL TCLP ANALYSES

As we discussed earlier, due to the indication by the meters that some volatile organics may be present in the inorganic contaminated soil stockpile, we are requesting approval of the following TCLP analyses:

Organics: Tetrachloroethene

Trichloroethene

Inorganics: Cadmium

Chromium (total)

Lead Nickel Silver

In addition, the soil should be analyzed for both total and amenable cyanides. These parameters were approved by Laidlaw, the EPA-approved disposer for the project. These parameters include the only organic and inorganic chemicals found at the site that are on the TCLP list.

If you have any questions, please give me a call at (606) 271-0269. Thank you.



## FAX TRANSMITTAL COVER SHEET

| DATE:       | 9/21/92  |
|-------------|--|
| то:         | Nastor Young   |
| COMPANY:    | U.S. EPA   |
| FAX NO:     | (40x) 3x7-1695   |
| FROM:       | Fin Kusus  |
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HATCHER-SAYRE, INC. OFFICE NO: (606) 271-0269 FAX NO: (606) 271-1204

September 16, 1992

(517) 496-4710

Writer's Direct Dial

VIA FACSIMILE

Ms. Brooke F. Dickerson Office of Regional Counsel US EPA Region 4 345 Courtland Street, N.E. Atlanta, Georgia 30365

Mr. Harold W. Taylor Waste management Division US EPA Region 4 345 Courtland Street, N.E. Atlanta, Georgia 30365

RE: Howe Valley Site, Hardin County Kentucky Additional Work, Amendment 1

Dear Ms. Dickerson and Mr. Taylor:

Pursuant to Article IX, Paragraph A, of the Consent Decree entered into between Dow Corning Corporation and the United States of America, Civil Action No.: C-91-0215-L-A, this serves to notify you that Dow Corning Corporation may need to perform additional work at the referenced Site to protect human health and the environment.

On September 14-15, 1992, during remediation activities for the organic contaminated soil, free liquid was encountered at about an eight (8) to ten (10) foot depth at the Site. This liquid appeared to be a mixture of volatile organic material and water. The mixture quickly separated into three distinct phases — water, water/volatile organic, and organic.

On September 14, 1992, during removal of organic containing soils for the onsite organic soil pilot study, free liquid seeped into the excavation. Approximately one (1) gallon collected in the bottom of the excavation. The bottom of the excavation was about ten (10) feet deep, and was located in a depression in the limestone bedrock.

Early on September 15, 1992, the liquid was pumped into a 55-gallon drum for storage prior to disposal. A sample was taken for analysis and characterization. Hatcher-Sayre has taken measures to keep the free liquid pumped from the hole.

#### DOW CORNING CORPORATION

The discovery of this free liquid was not expected. During the RI/FS activities at the Site, and in response to anecdotal evidence that some oily waste liquids had been dumped into a trench in the southwestern corner of the Central Area of the Site (see Section 3.3 of the Remedial Investigation for the Site, especially Figure 3.1), Dow Corning Corporation attempted to locate that trench without success. The EPA RPM was at the Site during that attempt. Dow Corning Corporation believes that this recent discovery of free liquid may be from that oily liquid disposal trench.

Pursuant to my letter of September 9, 1992, Dow Corning Corporation was to provide a written work plan for the additional work related to removal of drums found in deep soil on the Site. In order to address this new issue, Dow Corning will include a discussion of how it will address this free liquid during the remediation. Dow Corning Corporation will work with Hatcher-Sayre, Inc. to ensure that the work plan is sent to EPA prior to October 8, 1992 to remain in compliance with Article IX of the Consent Order.

To ensure that EPA and Dow Corning Corporation fully appreciate the impact of this free liquid on the Site remediation, I would suggest that we meet at the Site within the next 10 days. I understand Nestor Young will be back in his office on September 21, so perhaps we could meet during that week. Please have Mr. Young contact James Mersereau-Kempf at 517-496-5813 to make arrangements.

Dow Corning Corporation appreciates the efforts and assistance of the US EPA in remediating this Site. We look forward to working with EPA to address these concerns and the Site remediation in general.

Sincerely,

Edward C. Ovsenik Staff Attorney

Edward C. Ovrente

Admin Law C01242

CC: James Mersereau-Kempf, MID129

Dr. James Knauss, Hatcher-Sayre, Inc.

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### LEGAL DEPARTMENT

September 9, 1992

(517) 496-4710

Writer's Direct Dial

Ms. Brooke F. Dickerson Office of Regional Counsel US EPA Region 4 345 Courtland Street, N.E. Atlanta, Georgia 30365

Mr. Harold W. Taylor Waste management Division US EPA Region 4 345 Courtland Street, N.E. Atlanta, Georgia 30365

RE: Howe Valley Site, Hardin County Kentucky Additional Work

Dear Ms. Dickerson and Mr. Taylor:

Pursuant to Article IX, Paragraph A, of the Consent Decree entered into between Dow Corning Corporation and the United States of America, Civil Action No.: C-91-0215-L-A, this serves to notify you that Dow Corning Corporation may need to perform additional work at the referenced Site to protect human health and the environment.

On September 3, 1992, during remediation activities for the inorganic contaminated soil two crushed drums were discovered in relatively deep, undisturbed soil. The approximate location of these drums were 7.5 and C on Figure 7 of the Remedial Design Work Plan. The drum remnants and soils exhibiting volatile organic characteristics were segregated from the stockpiled inorganic soils.

On September 8, 1992, during construction of run-on/run-off diversion ditches for the organic remediation effort, two intact drums of material were found in relatively deep, undisturbed soil. Because these drums did not exhibit an organic characteristic the Site remediation contractor (Hatcher-Sayre, Inc.) believes them to contain cured silicone materials.

Immediately upon finding the two intact drums, the Site remediation contractor stopped further work and went to a level B protection status. Hatcher-Sayre, Inc. has arranged for an Electromagnetic Conductivity Meter to be brought to the Site to

#### **DOW CORNING CORPORATION**

survey for further buried drums. This apparatus should have arrived on the morning of September 9, 1992 and Hatcher-Sayre, Inc. should be performing the re-survey for buried drums.

The discovery of these drums was not expected. Dow Corning Corporation believed that all buried drums had been removed from the Site during the RI/FS Removal Action in 1988. However, because we found these drums, Dow Corning Corporation has directed Hatcher-Sayre, Inc. to resurvey the entire Site to ensure that any other drums are found and removed from the Site.

Pursuant to Paragraphs B, C, and D of Article IX of the Consent Decree, Dow Corning Corporation will provide a written work plan for the additional work on or before October 8, 1992. We will also advise EPA of the results of the further survey as soon as they are available.

I plan to be at the Site on September 10, 1992 to review this issue with Hatcher-Sayre, Inc. I will telephone you with the results of my visit on Friday September 11, 1992.

Dow Corning Corporation appreciates the efforts and assistance of the US EPA in remediating this Site. We look forward to working with EPA to address these concerns and the Site remediation in general. I will be out of my office until Tuesday, September 15th, but please call me at that time if you have any questions.

Sincerely,

Edward C. Ovsenik

Staff Attorney Admin Law C01242

CC: James Mersereau-Kempf, MID129

Dr. James Knauss, Hatcher-Sayre, Inc.

ECO/eo HOWEVALY\ARTIXNOT.let

Edward C. Ovrembe

U. S. ENVIRONMENTAL PROTECTION AGENCY REGION IV, ATHENS, GEORGIA

SEP 18 1992

#### MEMORANDUM

SUBJECT: Howe Valley Landfill Site, Howe Valley, Kentucky - REGION IV

Treatability Study, Effect of Roto-tilling on VOCLANTA, GA

Volatilization. ESD Project No. 92E-635.

FROM: Dan Thoman, Regional Expert/

Hazardous Waste Section

Environmental Compliance Branch Environmental Services Division

TO: Nestor Young

KY/TN Section

North Superfund Remedial Branch

Waste Management Division

THRU: William R. Bokey, Chief

Hazardous Waste Section

Environmental Compliance Branch Environmental Services Division

I have reviewed the above mentioned document and it appears adequate.

If you have any questions, please call me at 706-546-3172.

cc: Bokey/Hall

will Roll



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

September 3, 1992

Mr. Rick Hogan, Chief
Federal Superfund Section
Division of Waste Management
Kentucky Department for
Environmental Protection
Frankfort Office Park
18 Reilly Road
Frankfort, Kentucky 40601

RE: Howe Valley Landfill Site, Hardin County, Kentucky

Treatability Study Final Report

Dear Mr. Hogan:

Enclosed are four pages that contain changes for the final report of the Treatability Study for the Howe Valley Site (titled Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils) sent to you on August 31, 1992. Please use them to replace the same numbered pages of the August 25, 1992 report.

Please contact me at (404)347-7791 if you have any questions or comments.

Sincerely,

Nestor/Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

September 3, 1992

Ms. Joan Colson Environmental Specialist Technical Support Branch, RREL Mail Code: 489 26 Martin Luther King Drive Cincinnati, Ohio 45268

RE: Howe Valley Landfill Site, Hardin County, Kentucky

Treatability Study Final Report

Dear Ms. Colson:

Enclosed are four pages that contain changes for the final report of the Treatability Study for the Howe Valley Site (titled Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils) sent to you on August 31, 1992. Please use them to replace the same numbered pages of the August 25, 1992 report.

Please contact me at (404)347-7791 if you have any questions or comments.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

September 3, 1992

Mr. Ralph McKeen, P.E. Work Assignment Manager Roy F. Weston, Inc. 6021 Live Oak Parkway Norcross, Georgia 30093

RE: Howe Valley Landfill Site, Hardin County, Kentucky Treatability Study Final Report

Dear Mr. McKeen:

Enclosed are four pages that contain changes for the final report of the Treatability Study for the Howe Valley Site (titled Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils) sent to you on August 31, 1992. Please use them to replace the same numbered pages of the August 25, 1992 report.

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North Superfund Remedial Branch



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

September 3, 1992

Mr. Kenneth Skahn, P.E.
U.S. EPA OERR
Design and Construction
Management Branch
401 M. Street, S.W. (OS-220W)
Washington, D.C. 20460

RE: Howe Valley Landfill Site, Hardin County, Kentucky Treatability Study Final Report

Dear Mr. Skahn:

Enclosed are four pages that contain changes for the final report of the Treatability Study for the Howe Valley Site (titled Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils) sent to you on August 31, 1992. Please use them to replace the same numbered pages of the August 25, 1992 report.

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Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

September 3, 1992

Mr. William Bokey, Chief
Hazardous Waste Section
Environmental Compliance Branch
U.S. EPA Environmental
Services Division
960 College Station Road
Athens, Georgia 30613-0801

RE: Howe Valley Landfill Site, Hardin County, Kentucky
Treatability Study Final Report

Dear Mr. Bokey:

Enclosed are four pages that contain changes for the final report of the Treatability Study for the Howe Valley Site (titled Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils) sent to you on August 31, 1992. Please use them to replace the same numbered pages of the August 25, 1992 report.

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Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

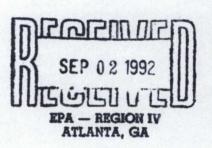
North Superfund Remedial Branch

### **The Dragun Corporation**

30445 Northwestern Hwy. • Suite 260 • Farmington Hills, MI 48334 • 313-932-0228 • FAX 313-932-0618

August 31, 1992

Mr. Nestor Young Remedial Project Manager Kentucky/Tennessee Section North Superfund Remedial Branch U.S. EPA Region IV 345 Courtland Street, N.E. Atlanta, GA 39365



SUBJECT:

Final Report, Treatability Study

Howe Valley Site, Hardin County, Kentucky

Dear Mr. Young:

Enclosed are eight copies of four pages for the final report of the Treatability Study for the Howe Valley Site, entitled "Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils." As these pages contain changes, please use them to replace the same numbered pages of the August 25, 1992 report.

Please contact The Dragun Corporation or Mr. Mersereau-Kempf if you have any questions or comments.

Sincerely,

THE DRAGUN CORPORATION

Wendy Kuhn, Ph.D. Laboratory Manager

Wendy hely

**Enclosures** 

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#### Site Background

The immediate health threats at the Howe Valley Site were alleviated through the removal of containerized and non-containerized wastes from the site. Data from soil sampling investigations conducted after waste removal and from a preliminary soil aeration study revealed that residual VOCs were still present in onsite soil. The analysis of groundwater and surface water samples showed that the chemicals had not migrated from the site in concentrations above safe drinking levels; however, the karst geology limited the sampling of groundwater directly beneath the site.

The principle threat to human health and the environment is the potential ingestion of, or dermal contact with, soil containing VOCs. A secondary threat is from ingestion of groundwater containing VOCs. However, the analysis of data derived from groundwater samples taken at Boutwell Spring (the only identified source of water leaving the site) indicated that VOC concentrations are below the MCLs, or drinking water health-based levels.

The remedial action for the Howe Valley Landfill Site in Hardin County, Kentucky is intended to address onsite soils that contain VOCs above acceptable concentrations with regard to human health and the environment. Soils containing inorganic compounds will be excavated and disposed of in the Laidlaw hazardous landfill in South Carolina.

#### **VOCs Identified in Site Soil**

The remaining onsite soil which contains VOCs is near the central portion of the site (see Figure 1). The field samples from the central area were analyzed for the four chemicals of concern: 1,1-dichloroethane (DCA), 1,2-dichloroethene (DCE), 1,1,1-trichloroethane (TCA), and tetrachloroethene (PCE). These compounds were chosen because:

- (a) All were common to the major organic waste source.
- (b) These were the primary organic chemicals found in the environmental soil samples.
- (c) These represented the most toxic VOCs present at this site.
- (d) These are representative of the solubility of VOCs present at this site.

With regard to each of the four chemicals of concern:

- DCA: No cleanup goal/soil action limit (SAL) has been established for DCA. The only location where it was noted above the detection limit was location 11H (three feet), where it was detected at 13 mg/kg.
- <u>DCE</u>: No DCE was detected above the SAL (7.72 mg/kg) on the surface, or at a depth greater than six feet. The distribution of DCE above the SAL occurred at location 11E where duplicate samples contained 15 and 20 mg/kg levels.
- TCA: No TCA above the SAL (117.3 mg/kg) was found in any surface sampling location. Two three-foot locations had levels above the SAL; 170 mg/kg at 9.5F.5 and 340 mg/kg at 11H. TCA levels were above the SAL at one location over six feet; 200 mg/kg at 9.5C.5.
- PCE: The only surface sample over the SAL (>7.50 mg/kg) for PCE was 80 mg/kg at 8E. Samples taken at three feet showed the broadest spatial distribution of contamination, 20 to 400 mg/kg in six samples. In addition, samples taken at depths greater than three feet that exceed the SAL ranged between 10 and 800 mg/kg in four samples.

#### GENERAL DESCRIPTION OF THE TREATABILITY STUDY

This protocol is based upon the principles and practices discussed in Aurelius and Brown (1987), Dragun (1988), Farmer et al. (1973), Goring and Hamaker (1972), and Jury et al. (1980). The study was conducted at The Dragun Corporation's environmental fate and treatability laboratory, 30445 Northwestern Highway, Suite 260, Farmington Hills, Michigan, 48334.

Mixed and sieved soil from the Howe Valley Site was placed in open-top 8.5-liter glass containers. Initial soil moisture by volume was ambient (23%) or high (34%). The treatability study utilized two soil moistures, at the U.S. EPA's request, to simulate the extreme moisture conditions which could exist at the site.

The glass containers with soil were placed into 100-L enclosed chambers maintained at room temperature (72°F). The selection of temperature is based on the mean summertime temperature at the site. Initial studies, without moist soil, showed that pan evaporation could

#### Soil Sampling Procedures

Duplicate soil samples were obtained from each soil unit at the beginning of the study and at 6, 12, 24, 48, and 72 hours, and every two or three days thereafter. One sample was sent to the analytical laboratory for VOC analysis and the other was retained by The Dragun Corporation's laboratory as a back-up sample. The back-up sample was retained until the analytical laboratory had successfully extracted the soil sample.

Soil samples were placed in 40-ml glass sample containers with teflon-lined screw caps. Soil was collected from all areas of the soil unit using a stainless steel scoop. A sufficient amount of soil was placed in each sample container so that no headspace was existed in the container. Soil sampling procedures, which are presented in the U.S. EPA manual describing standard operating procedures (U.S. EPA 1991), were utilized.

The analytical laboratory (NET Midwest, Inc., Auburn Hills, MI) analyzed the samples for VOCs using gas chromatography. Sample transfer followed chain-of-custody protocols. U.S. EPA Method 8010 was used. In addition, one sample was analyzed with U.S. EPA Method 8260 to verify the presence of PCE with mass spectroscopy. QA/QC procedures are presented in Appendix F.

#### PCE Initial Volatilization Rate Procedures

A study on the initial PCE volatilization from the soil units was conducted (soil unit HV9). Clean Howe Valley soil (100 g, ambient moisture) was transferred into glass containers and spiked to a concentration of either 100 or 200 ppm (w/w) PCE in methanol in the fume hood. VOC readings were taken just above the soil surface over a two-minute time period. A Photovac Tip I PID instrument with a 10.2 eV lamp was used, since it would not detect methanol.

A soil sample (40-ml container) was then taken for laboratory analysis. Just before the vial was closed, an additional VOC determination was made at the mouth of the vial.

The PCE volatilization rate was studied using a full-size soil unit in a closed chamber (soil unit HV10). A soil unit containing 3.4 Kg of Howe Valley soil was spiked to a concentration of 200 ppm (w/w) PCE in methanol. The solution was added to the soil unit (as outlined in the spiking procedure) while it resided in the 100-L chamber. The chamber was quickly closed and VOC readings were taken through a side port with the Photovac Tip I PID. VOC readings were taken over a three-hour time period.

In a separate PCE initial volatilization rate study (soil unit HV11, 3.2 Kg soil), PCE concentrations in air were measured over a two-hour time period. The chamber door was then opened for one minute, and afterwards, PCE concentrations in air were measured for an

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#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

August 31, 1992

Mr. William R. Bokey, Chief Hazardous Waste Section Environmental Compliance Branch U.S. EPA Environmental Services Division 960 College Station Road Athens, GA 30613-0801

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Mr. Bokey:

Thank you for the review comments your Section provided on the Treatability Study Work Plan for the Howe Valley Landfill NPL Site, titled Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils. The comments were utilized by the Potentially Responsible Party (PRP) to prepare the final document, which was approved on May 28, 1992.

The PRP's consultant, The Dragun Corporation, has completed the study and submitted the Final Treatability Study Report to Region IV on August 26.

Enclosed for review is the treatability study final report titled Final Report, Treatability Study for the Howe Valley Site Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils. Also, I have enclosed for reference the approved final Treatability Study Work Plan. Please provide a technical evaluation of the study and any comments related to the document's acceptability by October 2.

If you have any questions, please feel free to call me.

Sincerely,

Nestor Young

Remedial Project Manager
Kentucky/Tennessee Section
North Superfund Remedial Brand

North Superfund Remedial Branch

Enclosure.



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

August 31, 1992

Mr. Kenneth Skahn, P.E.
U.S. EPA OERR
Design and Construction
Management Branch
401 M Street, S.W. (OS-220W)
Washington D.C. 20460

RE: Howe Valley Landfill NPL Site.

Dear Mr. Skahn:

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Nestok Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

August 31, 1992

Mr. Ralph P. McKeen, P.E. Work Assignment Manager Roy F. Weston, Inc. 6021 Live Oak Parkway Norcross, Georgia 30093

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Mr. McKeen:

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Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

August 31, 1992

Ms. Joan Colson Environmental Specialist Technical Support Branch, RREL Mail Code: 489 26 Martin Luther King Drive Cincinnati, Ohio 45268

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Ms. Colson:

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The PRP's consultant, The Dragun Corporation, has completed the study and submitted the Final Treatability Study Report to EPA Region IV on August 26.

In continuation of our oversight efforts, I am again requesting assistance from your branch to review the enclosed final report, titled Treatability Study for the Howe Valley Site Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils. Also, I have enclosed for reference the approved final Treatability Study Work Plan. Please provide a technical evaluation of the study and any comments related to the document's acceptability by October 2.

Should you or your staff have any questions, please feel free to call me at (404) 347-7791. Thank you once again for your assistance.

Sincerely,

Nestox Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosures:

- 1. Treatability Study Work Plan, 2 copies
- 2. Treatability Study Final Report, 2 copies



## REGION IV 345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

## FACSIMILE TRANSMITTAL COVER SHEET

| Date:   |
|---|
| FEDERAL SUPERFUND SECTION  Company/Organization: KENTUCKY DEPT. FOR ENVIRONMENTAL PROTECTION  DIVISION OF WASTE MANAGEMENT  Phone Number: 502-564-6716 Fax Number: 502-564-2705  Number of Pages Sent (Including This Cover Sheet): 2 |
| Company/Organization: KENTUCKY DEPT. FOR ENVIRONMENTAL PROTECTION  DIVISION OF WASTE MANAGEMENT  Phone Number: 502-564-6716 Fax Number: 502-564-2705  Number of Pages Sent (Including This Cover Sheet): 2                            |
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| Number of Pages Sent (Including This Cover Sheet):  |
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| Please contact Nestor Young if this fax is received poorly or incomplete.   |
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|   |
| FROM: Nestor Young, Remedial Project Manager  |
| Kentucky/Tennessee Section  |
| North Superfund Remedial Branch   |
| Waste Management Division   |
| Phone Number: (404) 347-7791 Fax Number: (404) 347-1695   |
| FTS: 257-7791 FTS: 257-1695   |
| APPROVED  |
| NOTES: ATTACHED IS THE SCHEDULE FOR FIELD ACTIVITIES AT THE HOWE  |
| VALLEY SITE. AS YOU CAN SEE, THE PRE ARE MOBILIZING   |
| TODAY AND WILL IMPLEMENT THE INORGANIC DESIGN PLAN TOMORROW.  |
| PLEASE CALL ME IF YOU HAVE ANY QUESTIONS.   |
|   |
|   |
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# MESSAGE CONFIRMATION

DATE:08/31/92 TIME:10:11

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| DATE  | TIME  | TX-TIME | DISTANT STATION ID | MODE | PAGES | RESULT |
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#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

August 31, 1992

Mr. Rick Hogan, Chief
Federal Superfund Section
Division of Waste Management
Kentucky Department for
Environmental Protection
Frankfort Office Park
18 Reilly Road
Frankfort, Kentucky 40601

RE: General Tire Landfill, Mayfield, Graves County, Kentucky
Howe Valley Landfill, Howe Valley, Hardin County, Kentucky

Dear Mr. Hogan:

Enclosed for your Department's review are the following documents:

- Draft Feasibility Study for the General Tire Landfill Site
- Final Report, Treatability Study for the Howe Valley Site, Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils

Please provide comments on both documents by October 2, 1992.

If you or your staff should have any questions or would like to discuss these projects further, please call me at (404) 347-7791.

Sincerely,

Neston Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch





August 26, 1992

Mr. Nestor Young Remedial Project Manager U.S. EPA, Region IV North Superfund Remedial Branch 345 Courtland St. NE. Atlanta, GA. 30365

> Re: Howe Valley Landfill Hardin County, Kentucky Final Inorganic Design Plan

Pilot Treatability Study Work Plan

Dear Mr. Young:

In accordance with your letter and attached comments to Mr. James Mersereau-Kempf, Dow Corning Corporation, dated August 17, 1992, we are submitting five copies of the revised final forms of both referenced documents. The activities included in these plans are scheduled to begin August 31 and September 2, respectively. We greatly appreciate the timely assistance that you have provided us on this project.

If you have any questions, please give me a call. Thanks again.

Sincerely,

HATCHER SAYRE, INC.

James D. Knauss, Ph.D. Project Manager

attachments

cc: Jim Mersereau-Kempf Ed Ovsenik, Esq. Carroll Coogle

JDK/bh



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

August 28, 1992

Mr. James D. Knauss, Ph.D. Project Manager Hatcher-Sayre, Inc. 3150 Custer Drive, Suite 301 Lexington, Kentucky 40517

RE: Proposed schedule of field activities

Howe Valley Landfill, Hardin County, Kentucky

Dear Mr. Knauss:

The U.S. Environmental Protection Agency has reviewed your August 21, 1992 letter concerning the project schedule for implementing the inorganic contaminated soil removal and initiating the organic contaminated soil pilot study. The schedule as outlined in the letter is acceptable.

An EPA contractor will be on-site during certain portions of the field activities. EPA will be collecting a split soil sample and will also provide a blank and a spike sample for analysis by your laboratory.

I will be on vacation from September 7 through September 18. I will be back in the office on September 21. If there are any problems while I am away from the office, please contact Harold Taylor at 404-347-7791.

Sincerely,

Nestor Young

Remedial Project Manager

Kentucky/Tennessee Section

North Superfund Remedial Branch

pc: Harold Taylor, EPA

Ralph P. McKeen, Weston

Rick Hogan, KDEP

James Mersereau-Kempf, Dow Corning





August 21, 1992

Mr. Nestor Young Remedial Project Manager U.S. EPA, Region IV 345 Courtland St., NE Atlanta, GA. 40465

> Re: Howe Valley Landfill Hardin County, Kentucky Remedial Action Schedule Job No. 0064-001

Dear Mr. Young:

Attached is our anticipated schedule for undertaking the inorganic removal and initiating the organic remedial action pilot study. As indicated in your August 17, 1992 letter to James Mersereau-Kempf of Dow Corning Corporation, this schedule is being transmitted so as to provide the 10-day notification prior to any site work. As you can see, site preparation is scheduled for August 31 and the inorganic remediation for September 1, 1992.

Please call if you have any questions or comments. Thank you for your assistance in this matter.

Sincerely,

HATCHER-SAYRE, INC.

James D. Knauss, Ph.D.

Project Manager

attachment

cc: Jim Mersereau-Kempf

Ed Ovsenik Carroll Coogle

JDK/bh

## REMEDIAL ACTION IMPLEMENTATION

# HOWE VALLEY LANDFILL HARDIN COUNTY, KENTUCKY

| August 31          | Mobilization/Setup   |  |  |  |
|--------------------|--|--|--|--|
| September 1        | <pre>Inorganic Plan Implementation (Excavate/ Stockpile)</pre>     |  |  |  |
| September 2,3      | Site Preparation/Pilot Scale Plan                                  |  |  |  |
| September 4,5,7-11 | Pilot Scale Study Implementation                                   |  |  |  |
| September 14       | Begin Hauling Metal-Contaminated Soils/<br>Regrade Excavation Pits |  |  |  |
| September 15       | Completion Date for Inorganics<br>Organic Plan Implementation      |  |  |  |



August 21, 1992

Mr. Nestor Young Remedial Project Manager U.S. EPA, Region IV 345 Courtland St., NE Atlanta, GA. 40465

Re: Howe Valley Landfill
Hardin County, Kentucky
Remedial Action Schedule
Job No. 0064-001

Dear Mr. Young:

Attached is our anticipated schedule for undertaking the inorganic removal and initiating the organic remedial action pilot study. As indicated in your August 17, 1992 letter to James Mersereau-Kempf of Dow Corning Corporation, this schedule is being transmitted so as to provide the 10-day notification prior to any site work. As you can see, site preparation is scheduled for August 31 and the inorganic remediation for September 1, 1992.

Please call if you have any questions or comments. Thank you for your assistance in this matter.

Sincerely, HATCHER-SAYRE, INC

James D. Knauss, Ph.D. Project Manager

attachment -

cc: Jim Mersereau-Kempf Ed Ovsenik

Carroll Coogle

JDK/bh

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## REMEDIAL ACTION IMPLEMENTATION

# HOWE VALLEY LANDFILL HARDIN COUNTY, KENTUCKY

August 31 Mobilization/Setup

September 1 Inorganic Plan Implementation (Excavate/Stockpile)

September 2,3 Site Preparation/Pilot Scale Plan

September 4,5,7-11 Pilot Scale Study Implementation

September 14 Begin Hauling Metal-Contaminated Soils/Regrade Excavation Pits

September 15 Completion Date for Inorganics Organic Plan Implementation



# FAX TRANSMITTAL COVER SHEET

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| COMPANY: U.S. & PA              |
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| HATCHER-SAYRE, INC.             |

OFFICE NO: (606) 271-0269 FAX NO: (606) 271-1204

## **The Dragun Corporation**

30445 Northwestern Hwy. • Suite 260 • Farmington Hills, MI 48334 • 313-932-0228 • FAX 313-932-0618

August 25, 1992

Mr. Nestor Young
Remedial Project Manager
Kentucky/Tennessee Section
North Superfund Remedial Branch
U.S. EPA Region IV
345 Courtland Street, N.E.
Atlanta, GA 39365



SUBJECT:

Final Report, Treatability Study

Howe Valley Site, Hardin County, Kentucky

Dear Mr. Young:

Enclosed are eight copies of the final report of the Treatability Study for the Howe Valley Site, entitled "Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils."

Please contact The Dragun Corporation or Mr. Mersereau-Kempf if you have any questions or comments.

Sincerely,

THE DRAGUN CORPORATION

James Dragun, Ph.D., CPSS

Soil Chemist

Wendy Kuhn, Ph.D.

Laboratory Manager

Enclosures



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

August 17, 1992

Mr. James Mersereau-Kempf Environmental Geologist Dow Corning Corporation 3901 S. Saginaw Midland, Michigan 48686-0995

RE: Final Inorganic Design Plan and
Pilot Treatability Study Work Plan for the
Howe Valley Landfill, Hardin County, Kentucky

Dear Mr. Mersereau-Kempf:

The U.S. Environmental Protection Agency has completed reviewing the Final Inorganic Design Plan and Pilot Treatability Study Work Plan for the Howe Valley Landfill Superfund Site. Both documents are hereby approved contingent upon the modifications described in the attachment to this letter.

Please submit five copies of the revised final editions of both documents by August 31, 1992.

This letter also constitutes approval for the field work to commence while the documents are being finalized. However, any of the attached comments that may impact field activities should be given full consideration and must be followed.

A schedule of field activities must be submitted at least ten days prior to the start of any site work.

Please contact me, if you have any questions regarding this correspondence.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

pc: Harold Taylor, EPA Ralph McKeen, Weston

James Knauss, Hatcher-Sayre

Rick Hogan, KDEP

# The U.S. Environmental Protection Agency Review Comments for the Howe Valley Landfill

## Final Inorganic Design Plan and Pilot Treatability Study

August 17, 1992

#### FINAL INORGANIC DESIGN PLAN

1. Page 36, Section 3.2.4.2, Stockpile TCLP Analysis

The discussion describing collection of composite samples should explicitly state the total numbers of samples to be analyzed. It is unclear how many composite samples will be collected in each 25'x 50' stockpile.

2. Page 39, Section 3.4.2, <u>Air Requirements</u> and Page 49, Section 9.2, Air Monitoring

The text needs to state that air monitoring will be performed continuously during excavation.

3. Appendix B, Health and Safety Plan

Section X states that the calibration log for the PID and OVA instruments is attached. This log could not be found in the Plan.

#### PILOT TREATABILITY STUDY

- 1. This document should be titled <u>Pilot Treatability Study Work Plan</u>.
- 2. The wind direction on-site should be continuously measured to determine the direction of VOC emissions and dust particulates for protection of on-site workers.

Additionally, a rain gauge should also be provided to determine the amount of rain deposited daily on-site during field operations. Measuring the amount of rain water deposited on the soil will help in determining the effect of moisture on the treatment method in actual field conditions.

3. Page 6, Experimental Design and Procedures

Provisions for managing accumulation of stormwater in the excavated trenches (while confirmatory samples from the trench are being analyzed) should be provided.

U.S. EPA Review Comments
Howe Valley Landfill
Final Inorganic Design Plan an
Pilot Treatability Stud
August 17, 1992

## 4. Page 8, Experimental Design and Procedures

The text states that "If the soil VOC readings are consistently below 10 ppm, a composite sample will be taken from the floor of the excavation...". What is the rationale for using 10 ppm as the threshold concentration for collecting soil samples?

Will the PID and FID meters be interchanged during field operations? If so, then will the 10 ppm threshold represent the same concentration for both instruments, assuming that the PID and FID instruments are calibrated differently?

## 5. Page 8, Experimental Design and Procedures

According to the preliminary results of the bench-scale treatability study, PCE volatilization is inhibited by moisture in the soil. Therefore, care should be followed to ensure that a minimal amount of water is used when suppressing dust emissions.

## 6. Page 8, Experimental Design and Procedures

The sampling method described for collecting VOC soil samples is unacceptable. According to EPA Region IV Environmental Compliance Branch Standard Operating Procedures (SOP), Sections 4.2.10 and 4.11.5.1, soil samples collected for purgeable organic compound analyses should not be mixed. Please submit a sampling scheme appropriate for VOA soil samples. EPA suggests that discrete soil samples should be collected from center points in an adequately sized grid pattern.

# 7. <u>Field Sampling and Analysis Plan</u>, Page 6, Section 2.3.3, Field Screening Techniques.

This text primarily describes the procedure in which the soil being treated is tested to check contaminant levels with respect to the threshold limit. The last sentence in this section implies that the soil will be repeatedly sampled and tested until the desired results are achieved (i.e. the readings fall below 10 ppm). Clarification of the procedure referenced in the last sentence is needed.

U.S. RPA Review Comments
Howe Valley Landfill
Final Inorganic Design Plan an
Pilot Treatability Stud
August 17, 1992

8. <u>Field Sampling and Analysis Plan</u>, Page 6, Section 2.4.3, <u>Confirmation Sampling Techniques</u>

See comment number 6 regarding collection of VOA samples. Also, a grid for collecting aliquot soil samples is referenced but is missing.





August 7, 1992

Mr. Nestor Young Remedial Project Manager U.S. Environmental Protection Agency, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

RE: Pilot Treatability Study Review Comments
Howe Valley Landfill Site, Howe Valley, Hardin County, Kentucky
Work Assignment No. 17-4XN8; Contract No. 68-W9-0057
Document Control No. 4400-17-ACCK

Dear Mr. Young:

Roy F. Weston, Inc., (WESTON) has prepared the attached comments on the Pilot Treatability Study as specified in the Scope of Work for its Remedial Design/Remedial Action (RD/RA) oversight activities at the Howe Valley Landfill Site. WESTON is providing RD/RA oversight and project assistance to the U.S. Environmental Protection Agency (EPA), Region IV, under EPA Contract No. 68-W9-0057. The attached comments are in response to the "Pilot Treatability Study," prepared for Dow Corning Corporation by Hatcher-Sayre, Inc., July 28, 1992.

The Pilot Treatability Study submitted by Hatcher-Sayre includes the project description, preliminary results of the Bench Scale Treatability Study, Sampling & Analysis Plan, and a Health & Safety Plan. WESTON's review focused on EPA's review comments of the Draft Inorganic Design Plan as well as consistency with respect to the objectives of the EPA Record of Decision (ROD) and the ARARS contained within the ROD. OSWER Directive 9355.5-01 "Interim Final Guidance on EPA Oversight of Remedial Designs and Remedial



Actions Performed by Potentially Responsible Parties, February 1990" was also utilized as a guidance document in the review process.

If you have any questions concerning these comments, please call me at (404) 448-0644.

Sincerely,

Roy F. Weston, Inc.

Ralph P. McKeen, P.E. Work Assignment Manager

/rpm Enclosure

cc: Annie Godfrey, EPA, Region IV (w/enclosure)
Lester Lewis, EPA, Region IV (w/o enclosure)
Randy Ferguson, WESTON (w/enclosure)

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Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0

Date: August 1992 Page: 1 of 2

#### **ATTACHMENT**

Contract No. 68-W9-0057 Work Assignment No. 17-4XN8 Document Control No. 4400-17-ACCK

#### PILOT TREATABILITY STUDY

A Pilot Study typically involves equipment and materials smaller than the full-scale operations. This Pilot Study, however, is to be performed as the actual full-scale remedial action; therefore, there are requirements of the Final Remedial Design and Remedial Action Plan which should be addressed.

## 1. Page 6, Experimental Design and Procedures

There needs to be a provision to address the potential for accumulation of stormwater in the excavated trenches while confirmatory samples from the trench are being analyzed.

## 2. Sampling & Analysis Plan, Section 2.4.3

The grid for collecting composite soil sampling is referred to but missing.

### 3. General - Contingency Plan

A Contingency Plan is written to protect the local affected population in the event of an accident or emergency. Since this Pilot Study is essentially part of the remedial action, the Contingency Plan should be developed. The most important item of this Plan should be an Air Monitoring Plan for both boundary and on-site monitoring. Included in the plan should be trigger concentrations to implement the Contingency Plan.



## August 7, 1992

Mr. Nestor Young Remedial Project Manager U.S. Environmental Protection Agency, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

RE: Pilot Treatability Study Review Comments
Howe Valley Landfill Site, Howe Valley, Hardin County, Kentucky
Work Assignment No. 17-4XN8; Contract No. 68-W9-0057
Document Control No. 4400-17-ACCK

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Mr. Nestor Young August 7, 1992 Page 2

NORCROSS→

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If you have any questions concerning these comments, please call me at (404) 448-0644.

Sincerely,

Roy F. Weston, Inc.

Ralph P. McKeen, P.E.

Work Assignment Manager

/rpm Enclosure

cc: Annie Godfrey, EPA, Region IV (w/enclosure)
Lester Lewis, EPA, Region IV (w/o enclosure)
Randy Ferguson, WESTON (w/enclosure)

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> Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: August 1992

Page: 1 of 2

NORCROSS→

#### ATTACHMENT

Contract No. 68-W9-0057 Work Assignment No. 17-4XN8 Document Control No. 4400-17-ACCK

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# TELECOPY TRANSMITTAL FORM

ROY F. WESTON, INC. WESTON SERVICES, INC.

6021 Live Oak Parkway
Norcross, Georgia 30093
Confirmation Telephone (404) 448–0644
Telecopy Telephone (404) 368–1168

| TO:              | Nestin young                        |
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#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

August 6, 1992

#### **MEMORANDUM**

Subject:

Review comments on Final Design Plan

Howe Valley Landfill Site

Hardin County, KY

From:

Liza I. Montalvo

Remedial Project Manager

NSRB-KY/TN Section

To:

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Attached are the previous comments of the Draft Inorganic Design Plan of the above-mentioned Site which were not correctly stated or addressed in the Final Design Plan. Also included are the copies of the comments and the letter of Mr. Ralph P. McKeen, P.E., Work Assignment Manager after reviewing the Final Design Plan, the Draft Inorganic Design Plan Review Comments, and the Final Inorganic Design Plan.

Enclosures

#### CONSENT DECREE/SCOPE OF WORK REQUIREMENTS

- 1. Site access agreements/easements with adjacent properties owners was not discussed.
- 2. A construction cost estimate accurate to within +15 percent to -10 percent shall be submitted.

#### GENERAL COMMENTS

1. The Table of Contents should include the list of appendices in the report.

#### SPECIFIC COMMENTS

- 1. Page 38, Section 3.2.5 <u>Materials and Equipment</u>
  How many dump trucks will be used to haul the contaminated soil to the RCRA Facility?
- 2. Page 38, Section 3.2.6 <u>Performance Standards</u>

  The remedy selected in the ROD requires reducing contaminant concentration below health-based clean-up levels (SAL's) outlined in the Consent Decree/Scope of Work.

### HEALTH AND SAFETY PLAN

- 1. Identify the roles and responsibilities of Hatche-Sayre, Inc. and their subcontractors during site operations.
- 2. Include a Direct Reading Air Monitoring Instruments Calibration record.

#### TECHNICAL SPECIFICATIONS

- 1. Since access to the Site is not limited by any means, then provisions for restriction access to the contaminated soil stockpile should be made.
- 2. A section should be developed to give guidance to the contractor for handling storm water that enters the excavation.

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Fk. .: Liza J. Montaluo

Conneils on : Relet Treatability Study - House Valley Landfill
Hardin County, Kentucky

- 1. In the last paragraph of Page 6 it islands the stated how many trenches care (going to the made Callengh Figure 3 cohours releven trenches.
- 2. Page 8, Step 1 Since the coepts of contamination (Page 2), and depth to bedrack (Page 5) care known the depth of each treach can be cotated.
- 3. Instead of taking out the Caeralid would from the caeralid carea, putting them in the stockpile carea and wait for the visualty of the canalysis, this would caeralid the kept in the caeration area (wontinuing the process of aeration) until the compirmation of the visualts care visceized. Inc. (the visualts constitute than 10 ppm voc them the would can the visualts can the visualts with its vispecture trenches. This eliminates the cuse of the stockpile areas, and cales caused vie-depositing of the soils in case the voc visualts whom not than 10 ppm.



6021 LIVE OAK PARKWAY NORCROSS, GA 30093 PHONE: (404) 448-0644

August 4, 1992

Mr. Nestor Young Remedial Project Manager U.S. Environmental Protection Agency, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365



RE: Final Inorganic Design Plan Review Comments
Work Assignment No. 17-4XN8
Howe Valley Landfill Site, Howe Valley, Hardin County, Kentucky
Contract No. 68-W9-0057; Document Control No. 4400-17-ACCA

Dear Mr. Young:

Roy F. Weston, Inc., (WESTON) has prepared the enclosed comments on the Final Inorganic Design Plan as specified in the Scope of Work for its Remedial Design/Remedial Action (RD/RA) oversight activities at the Howe Valley Landfill Site. WESTON is providing RD/RA oversight and project assistance to the U.S. Environmental Protection Agency (EPA), Region IV, under EPA Contract No. 68-W9-0057. The enclosed comments are in response to the "Final Inorganic Design Plan", prepared for Dow Corning Corporation by Hatcher-Sayre, Inc., May 29, 1992.

The Inorganic Design Plan submitted by Hatcher-Sayre includes prior data acquisition and analytical results, Health and Safety Plan, and specifications to remediate the inorganic contaminated soils. WESTON's review focused on modifications made in accordance with EPA's review comments of the Draft Inorganic Design Plan as well as consistency with respect to the objectives of the EPA Record of Decision (ROD) and the ARARs contained within the ROD. OSWER Directive 9355.5-01 "Interim Final Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, February 1990" was also utilized as a guidance document in the review process.

If you have any questions concerning these comments, please call me at (404) 448-0644.

Sincerely,

Roy F. Weston, Inc.

Ralph P. McKeen, P.E.

Work Assignment Manager

/rpm Enclosure See page 2 for distribution.



## Distribution

cc: Annie Godfrey, EPA, Region IV (w/enclosure) Lester Lewis, EPA, Region IV (w/o enclosure) Randy Ferguson, WESTON (w/enclosure) This document was prepared by Roy F. Weston, Inc., expressly for EPA. It shall not be released or disclosed, in whole or in part, without the express written permission of EPA.

Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0

Date: August 1992 Page: 1 of 2

### **ATTACHMENT**

Contract No. 68-W9-0057 Work Assignment No. 17-4XN8 Document Control No. 4400-17-ACCA

### FINAL INORGANIC DESIGN

The majority of the EPA comments from the Draft Preliminary Inorganic Design Plan submitted to Dow Corning Corporation on May 20, 1992 have been incorporated with appropriate design modifications. The following are additional comments and/or previous comments which were not completely addressed.

## 1. Consent Decree/SOW Requirements

The document failed to address the following two items:

- a) Site access agreements/easements with adjacent property owners.
- b) A construction cost estimate accurate to within +15 percent to -10 percent was not included.

## 2. Subsection 3.4.2 Air Requirements

The text needs to be modified to state that air monitoring will be performed continuously during excavation as per the EPA Region IV Environmental Services Division recommendation.

## 3. Section 7.0 Construction Quality Assurance Plan

Normally, Construction Quality Assurance (CQA) is performed by qualified individuals independent of the constructor so the results of the quality assurance are unbiased and objective. However, due to the uncomplicated nature of this remedial action, independent CQA is not warranted. Additionally, the EPA oversight contractor will be on site to observe these actions and document project completeness.

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Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: August 1992

Date: August 1992 Page: 2 of 2

## 4. Section 9.0 Contingency Plan

The plan should address off-site transportation of contaminated materials through populated areas in the event of an accident or emergency.

## 5. Appendix B, Health & Safety Plan

The Health & Safety Plan Acknowledgement/Approval Sheet should be placed at the end of Plan to encourage individuals to read the Plan before signing.

Section X states that the calibration log for the PID and OVA instruments is attached. This log could not be found in the Plan.



August 4, 1992

; 8- 4-92 ; 3:37PM ;

Mr. Nestor Young Remedial Project Manager U.S. Environmental Protection Agency, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

Final Inorganic Design Plan Review Comments Work Assignment No. 17-4XN8 Howe Valley Landfill Site, Howe Valley, Hardin County, Kentucky Contract No. 68-W9-0057; Document Control No. 4400-17-ACCA

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Sincerely,

Roy F. Weston, Inc.

Ralph P. McKeen, P.E.

Work Assignment Manager

/rpm Enclosure

Sec page 2 for distribution.



Mr. Nestor Young August 4, 1992 Page 2

## Distribution

cc: Annie Godfrey, EPA, Region IV (w/enclosure)
Lester Lewis, EPA, Region IV (w/o enclosure)
Randy Ferguson, WESTON (w/enclosure)

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Comments/Responses
Howe Valley Landfill Site
Howe Valley, Hardin County, KY
Revision: 0
Date: August 1992
Page: 1 of 2

### **ATTACHMENT**

Contract No. 68-W9-0057
Work Assignment No. 17-4XN8
Document Control No. 4400-17-ACCA

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Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: August 1992 Page: 2 of 2

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# **TELECOPY TRANSMITTAL FORM**

# ROY F. WESTON, INC.

6021 Live Oak Parkway
Norcross, Georgia 30093
Confirmation Telephone (404) 448–0644
Telecopy Telephone (404) 368–1168

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| DATE:            | 4 AUGUT 1992                        |
| NUMBER OF PAGES: | 5                                   |
|                  | (including transmittal cover sheet) |
| MESSAGE:         | Howe VACLEY                         |
|                  | -FINAL INVAGALIC DESIGN COMMENTS    |
|                  |                                     |
|                  | - ORIGINALS WILL BE MAILED TODAY    |
|                  |                                     |
|                  |                                     |
|                  |                                     |
|                  | IF ALL PAGES ARE NOT RECEIVED       |
|                  | PLEASE CALL                         |
|                  |                                     |
|                  | AT (404) 448-0644                   |



### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

July 30, 1992

Mr. Kenneth Skahn, P.E.
U.S. EPA OERR
Design and Construction
Management Branch
401 M Street, S.W. (OS-220W)
Washington D.C. 20460

RE: Howe Valley Landfill NPL Site.

Dear Mr. Skahn:

Enclosed is the second draft (final) of the Inorganic Design Plan, and a proposed Pilot Study for the Howe Valley Site. I have also enclosed EPA's comments on the previous review of the Inorganic Design Plan for your file.

Hatcher-Sayre is proposing to conduct a Pilot Study to better determine the remedy's implementability in the field based on preliminary results of the Bench Scale Treatability Study (the Treatability Study Report has not been submitted yet). I believe that the pilot study will provide a more accurate evaluation of the effectiveness of the remedy, and it will allow Dow Corning to complete the remedial action ahead of schedule.

Please review both documents to determine if they are technically acceptable and meets EPA guidance criteria. Please note, however, that Hatcher-Sayre has indicated that the scope of the pilot study is somewhat flexible to allow for any necessary adjustments. I agree on keeping the pilot study flexible, and suggest that your review should allow for reasonable adjustments in the field.

Since Region IV is encouraging Dow Corning to begin field activities as soon as possible, I am requesting that you provide a quick review of both documents. Therefore, please return your comments by August 7, 1992. If this timeframe is difficult to meet, please call me at 404-347-7791.

Thanks for your continued support.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

### **MEMORANDUM**

Date:

July 30, 1992

To:

Ralph McKeen, P.E.

Senior Project Engineer

Roy F. Weston, Inc.

From:

Nestor Young

Remedial Project Manager

North Superfund Remedial Branch

Subject: Howe Valley Landfill, Hardin County, Kentucky

Enclosed is a proposed Pilot Study for the Howe Valley Site. Hatcher-Sayre is proposing to conduct this study to better determine the remedy's implementability in the field based on preliminary results of the Bench Scale Treatability Study. The EPA agrees with this approach since it will provide a more accurate evaluation of the effectiveness of the remedy, and it will allow Dow Corning to complete the remedial action ahead of schedule.

Please review the document to determine if it is technically acceptable and meets EPA guidance criteria. Keep in mind, however, that Hatcher-Sayre has indicated that the scope of the pilot study is somewhat flexible to allow for any necessary adjustments. I agree on keeping the pilot study flexible, and suggest that your review should allow for reasonable adjustments in the field.

Since the EPA is encouraging Dow Corning to begin field activities as soon as possible, I am also requesting that you provide a quick review of this document. Therefore, please return your comments by August 7, 1992. Call me if you have any questions.





July 28, 1992

Mr. Nestor Young Remedial Project Manager USEPA, Region IV 345 Courtland St. NE Atlanta, GA. 30365

> Re: Howe Valley Landfill Hardin County, Kentucky Pilot Treatability Study Job No. 0064-001

Dear Mr. Young:

Enclosed are eight copies of the proposed Pilot Treatability Study for the Howe Valley Superfund Site. Due to the time constraints, Dow Corning Corporation has requested that we send these documents directly to you. As we discussed, we have left the scope of work for the pilot study somewhat flexible to allow for any necessary adjustments to the program.

If you have any questions, please give me a call. We appreciate your immediate attention to this document.

Sincerely, HATCHER-SAYRE, INC

James D. Knauss, Ph.D.

Project Manager

enclosures cc: Jim Mersereau-Kempf Ed Ovsenik

Carroll Coogle

JDK/bh





June 26, 1992

Mr. Nestor Young Remedial Project Manager U.S. EPA, Region IV 345 Courtland St. NE Atlanta, GA. 30365

> Final Inorganic Design Plan Re: Howe Valley Landfill Hardin County, Kentucky Job No. 0064-001

Dear Mr. Young:

Enclosed are 6 copies of the Final Inorganic Design Plan which has been revised in response to comments issued by EPA dated May Except as noted below, all of the comments were considered and the appropriate changes made to the Plan. following two items were not incorporated into the Plan:

Comment 1: Site access agreements/easements with adjacent

property owners were not discussed.

This aspect of the project has not been Response:

completed at this time. Dow Corning has attempted on several occasions to resolve this matter, however, no concrete agreement has been reached. We have attached a copy of the latest correspondence in this regard for

information purposes.

Comment 2: A construction cost estimate accurate to

within +15 percent to -10 percent shall be

submitted.

Response: A construction cost estimate is required for

> Fund-financed remedial actions only (see OSWER 2.7, Directive 9355.0-4A, Section Cost Estimates for Construction). Dow Corning, therefore, has opted not to provide this information at this time.

We believe that this revised document addresses EPA's comments and should result in the approval of the Inorganic Plan. We intend

Mr. Young June 26, 1992 Page 2



to initiate this aspect of the project as soon as we receive EPA approval. If you have any questions or comments, please give me a call.

Sincerly, HATCHER-SAYRE,

James D. Knauss, Ph.D. Project Manager

enclosures JDK/bh

Start VIA FEDERAL EXPLES # 603 6874 435 7/24/92



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

### MEMORANDUM

Date:

July 24, 1992

To:

Ralph McKeen, P.E.

Senior Project Engineer

Roy F. Weston, Inc.

From:

Nestor Young

Remedial Project Manager

North Superfund Remedial Branck

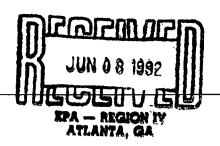
Subject: Howe Valley Landfill, Hardin County, Kentucky

Enclosed is the second draft (final) of the Inorganic Design Plan. Please review the document and determine if modifications were made in accordance with EPA's comments. Also, determine if the document is technically acceptable and meets EPA guidance criteria.

Please return your comments by August 4, 1992. Call me if you have any questions.







## LEGAL DEPARTMENT

June 2, 1992

(517) 496-4710

Writer's Direct Dial

REGISTERED MAIL P-781 038 774

Mr. Paul Edlin 52 Auto Sales 1061 New Hope Road New Haven, Kentucky 40051

Mr. Joseph and Mrs. Lilley Robey General Delivery Saint Francis, Kentucky 40062 P-781 038 775

RE: Property in Howe Valley, Kentucky Adjacent to Superfund Site

Dear Mr. Edlin and Mr. and Mrs. Robey:

About one year ago, it came to my attention that Mr. Edlin was acting as the owner of, or agent of the true owners, with respect to property located on and adjacent to a Superfund Site in the Howe Valley, Kentucky area. To that extent, I was told you were willing to discuss the possible sale of that property.

Ten and one-half months ago I wrote to Mr. Edlin requesting a discussion related to Dow Corning's purchase of a small part of the property owned by Joseph and Lilley Robey (See Attachment 1). I did not receive a response to my letter. Nineteen days ago I stopped at Mr. and Mrs. Robey's house, but no one was home. I also stopped at Mr. Edlin's house and reiterated Dow Corning's concerns to his wife, as well as a request to have Mr. Edlin call me. I never received a call. I am now writing to you to inform you of what will be done by Dow Corning Corporation at the Superfund Site, and how that may affect a portion of the Robey's property.

After reviewing the property records in the Hardin County Clerk's Office, Dow Corning knows that the Robeys own the property. We know the approximate size of the property as recorded in the deed book, and we know the amount of property taxes paid on the property (the taxes are current). We also know the price the Robey's paid for the property.

Dow Corning Corporation is in the process of removing certain metals contaminated soils at the Superfund Site. In so doing, we may take access to the Site across a portion of the Robey's land.

#### **DOW CORNING CORPORATION**

Addresses:

Freight & UPS 2200 W. Salzburg Road Auburn, MI 48611 First Class & Parcel Post Legal Department C01222 Midland, MI 48686-0994 Facsimile: (517) 496-5849 (I) (517) 496-6354 (II) Telex: 189806000 Edlin/Robeys Howe Valley Site Access

Dow Corning Corporation believes it has the right to such access across the property due to an agreement with a former property owner of the land. See Attachment 2. Dow Corning will use the agreed to access in pursuing the metals contaminated soil cleanup.

Furthermore, in the near future, Dow Corning Corporation will be remediating organic contaminated soils at the Site. The area to be remediated may include a portion of the property owned by the Robey's. Our current plan is to use a system of trenches and soil piles in which we will roto-till the soil to evaporate volatile organic chemicals. Dow Corning Corporation will rely on the agreement with the former landowner in accessing the Site and in remediating soils on the Robey's property.

Should you choose not to honor the past agreement, Dow Corning Corporation will work with EPA to obtain a court order directing you to give Dow Corning access to the property. A 1988 decision in Federal District Court in Connecticut stated that EPA could seek an order requiring landowners to grant access to a group of settling generators to enter the property and conduct long-term remediation activities. If needed, Dow Corning is more than willing to take an action in court to force you to allow access to the Site. Dow Corning could also request EPA to issue such an order under Superfund or use the Federal Government's power of eminent domain to force the sale of the property to the government.

Furthermore, under Superfund, parties liable for cleanup of a Site include the landowners. Since the landowners at the time of the disposal have settled with Dow Corning Corporation, current landowner liability for initial cleanups may be moot. However, the work performed by Dow Corning will greatly enhance the value of the property. To that extent, Dow Corning Corporation could seek reimbursement from the current landowners.

You should also know that certain duties are mandated by a Consent Decree signed by the US EPA and Dow Corning Corporation. Dow Corning must place a copy of the Agreed Order with the property deed for the Site. Furthermore, Dow Corning had to grant an easement for access to the Site by EPA. That easement is on file with the Hardin County Clerk's Office. The EPA could issue a unilateral order requiring you to comply with similar provisions.

Given all of these issues, Dow Corning Corporation is once again seeking to purchase some portion of your property to effect cleanup of the Site. Dow Corning is not interested in the purchase of your entire property. We do not need the land and we have no idea of the environmental status of the remainder of the

Edlin/Robeys Howe Valley Site Access June 2, 1992

property. We are willing to open negotiations regarding the amount of property to be purchased, the cost of that property, and payment for costs related to surveying the property to be sold. Dow Corning realizes that the Robeys have a significant amount of money invested in this property. Dow Corning is not trying to make money off that investment. Dow Corning is interested in adequately remediating the Site, protecting future populations at the Site, and in complying with the Agreed Order entered into with EPA.

Please call me collect at the number above so that we may arrange a mutually convenient time for a meeting. If I do not hear from you before July 2, 1992 I will presume you have no intent of replying and will pursue my options through EPA or litigation. I look forward to hearing from you.

Sincerely.

Edward C. Ovsenik

Staff Attorney Admin Law C01242

CC:

Brooke F. Dickerson, ORC, US EPA Region IV Nestor Young, WMD, US EPA Region IV Carroll Coogle, DCC, E'town

ECO/eo CERCLA\ADJLND2.1et



### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

May 28, 1992

Mr. James Mersereau-Kempf Environmental Geologist Dow Corning Corporation 3901 S. Saginaw Midland, Michigan 48686-0995

RE: Treatability Study Work Plan

Howe Valley Landfill, Hardin County, Kentucky

Dear Mr. Mersereau-Kempf:

The U.S. Environmental Protection Agency has reviewed the revised Treatability Study Work Plan for the Howe Valley Site, Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization, dated April 30, 1992, and hereby approves the document. Additionally, the Dragun Corporation's request, outlined in their letter dated May 26, 1992, to modify the Test Protocol as a result of regulatory limitations in the State of Michigan, is also approved.

Please advise me as soon as possible of the planned date for collecting soil samples from the site.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

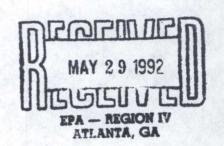
North Superfund Remedial Branch

pc: James Dragun, The Dragun Corp.

Wendy Kuhn, The Dragun Corp. James Knauss, Hatcher-Sayre

Rick Hogan, KDEP





May 27, 1992

Mr. Nestor Young Remedial Project Manager U.S. Environmental Protection Agency, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

RE: Treatability Study Work Plan (Revision 1) Review

Work Assignment No. 17-4XN8

Howe Valley Landfill

Howe Valley, Hardin County, Kentucky

Contract No. 68-W9-0057

Document Control No. 4400-17-ABVV

Dear Mr. Young:

Roy F. Weston (WESTON) has reviewed the first revision of the Treatability Study Work Plan relative to the EPA's comments submitted to Dow Corning Corporation on April 15, 1992. These comments were in response to the review of the initial Treatability Study Work Plan dated February 20, 1992.

Overall, the revised Treatability Study Work Plan (April 30, 1992) is consistent with those comments presented on April 15, 1992. A greater level of detail has been provided into the work plan particularly in the areas of "Background Information" and "Procedures".

However, the Site Safety Plan included as Appendix C1 is not a "site specific" health and safety plan. Appendix C has all of the required elements but is only a format. These elements should be carried forward into the site specific safety plan. For instance, the personal level of protection should be established for each individual task. Also, action levels based on direct reading air monitoring should be defined for changing levels of protection. Sufficient information is available on the contaminants and hazards at the site to establish these protection requirements. Dow Corning should refer to the health and safety plans developed by Hatcher-Sayre, Inc. and EPA comments relative to their health and safety plan.



Please call me at (404) 448-0644 if you have any questions.

Sincerely,

Roy F. Weston, Inc.

Ralph P. McKeen, P.E. Work Assignment Manager

cc:

Charles Swan, EPA, Region IV L. Lewis, EPA, Region IV R.R. Ferguson, WESTON

AT (404) 448-0644

# TELECOPY TRANSMITTAL FORM

# ROY F. WESTON, INC.

6021 Live Oak Parkway
Norcross, Georgia 30093
Confirmation Telephone (404) 448-0644
Telecopy Telephone (404) 368-1168

| TO:              | NESTON YOUNG   |
|------------------|--|
| TELECOPY NUMBER: | 347-1695   |
| FROM:            | RALPH MCKEEN   |
| DATE:            | 5/28/92  |
| NUMBER OF PAGES: | (Including transmittal cover sheet)  |
| MESSAGE:         | RE: Home Valley - TREADABILAT STUDY WORK PLAN  |
|                  | WESTON HAS REVIEWED THE REVUED WORK PLAN SUBMITTED BY DRAGON 4/30/92. COMMENTE ARE ATTACHED.  ALSO, WESTON HAS REVIEWED THE REVISED PROCEDURE DESCRIBED IN A LETTER FROM |
|                  | ACTUAL CONTAMINATED SITE MATERIAL IS THE   |
|                  | BEST TO USE, HOWEVER, IN LIEU OF THE<br>RESTRICTIONS WHICH PRAGEN FACES, WESTON<br>AGREE THAT THE SPIKING PROCEDURE SHOULD   |
| PRO              | OVIDE AN ADECUME IF ALL PAGES ARE NOT RECEIVED THE FOR THE STUDY. PLEASE CALL  |
|                  | CALP NOTE  |





May 27, 1992

Mr. Nestor Young Remedial Project Manager U.S. Environmental Protection Agency, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

RE: Treatability Study Work Plan (Revision 1) Review Work Assignment No. 17-4XN8
Howe Valley Landfill
Howe Valley, Hardin County, Kentucky
Contract No. 68-W9-0057
Document Control No. 4400-17-ABVV

### Dear Mr. Young:

Roy F. Weston (WESTON) has reviewed the first revision of the Treatability Study Work Plan relative to the EPA's comments submitted to Dow Corning Corporation on April 15, 1992. These comments were in response to the review of the initial Treatability Study Work Plan dated February 20, 1992.

Overall, the revised Treatability Study Work Plan (April 30, 1992) is consistent with those comments presented on April 15, 1992. A greater level of detail has been provided into the work plan particularly in the areas of "Background Information" and "Procedures".

However, the Site Safety Plan included as Appendix C1 is not a "site specific" health and safety plan. Appendix C has all of the required elements but is only a format. These elements should be carried forward into the site specific safety plan. For instance, the personal level of protection should be established for each individual task. Also, action levels based on direct reading air monitoring should be defined for changing levels of protection. Sufficient information is available on the contaminants and hazards at the site to establish these protection requirements. Dow Corning should refer to the health and safety plans developed by Hatcher-Sayre, Inc. and EPA comments relative to their health and safety plan.



Mr. Nestor Young May 27, 1992 Page 2

Please call me at (404) 448-0644 if you have any questions.

Sincerely,

Roy F. Weston, Inc.

Ralph P. McKeen, P.E. Work Assignment Manager

cc:

Charles Swan, EPA, Region IV L. Lewis, EPA, Region IV R.R. Ferguson, WESTON

# **The Dragun Corporation**

30445 Northwestern Hwy. • Suite 260 • Farmington Hills, MI 48334 • 313-932-0228 • FAX 313-932-0618

May 26, 1992

Nestor Young Remedial Project Manager Kentucky/Tennessee Section North Superfund Remedial Branch USEPA Region IV 345 Courtland Street, N.E. Atlanta, GA 30365



RE: Treatability Study Work Plan for the Howe Valley Site,

Hardin Valley, KY

Dear Mr. Young:

After discussion of your suggestions for the soil to be used in the "Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils", April 30, 1992 (Protocol), we propose to make the following alterations to the procedures.

Approximately 20 gallons of clean soil will be collected at the Howe Valley Site from the location C-13 (11W, 160N) (see Protocol, Figure 1). The soil will be sieved and mixed at the site, then placed in clean, five-gallon containers for shipping. A custody seal will be placed on each sample container, and the soil will be shipped to The Dragun Corporation on a commercial carrier.

For the purpose of determining a baseline, the soil will be analyzed by an independent laboratory for total VOC concentration. To initiate the bench-scale study, all soil units (as outlined in Table 1 of the Protocol) will be spiked with PCE, following the Protocol procedures. The experiment will then continue as stated in the Protocol.

Because the vapor pressures of the VOCs in the Howe Valley soil are relatively high, significant volatilization of the compounds was expected to occur prior to receipt of the VOC-containing soil by The Dragun Corporation. The spiking procedure was included in the original procedures to account for these losses. We believe that use of the spiking procedure for the soil in the bench-scale roto-tilling study will still be representative of the onsite conditions. Although significant slow diffusion of the PCE into select soil pores will probably not occur, we believe that this process accounts for a small portion of the total sorption processes.

Mr. Nestor Young May 26, 1992 Page 2

Please contact The Dragun Corporation or Mr. Mersereau-Kempf about your response to this revision and the submitted Treatability Study Work Plan for the Howe Valley Site (April 30, 1992) to enable us to move forward on this project.

Sincerely,

THE DRAGUN CORPORATION

Wendy Kuhn, Ph.D.

Wardy Khu

Toxicologist

cc: James Mersereau-Kempf, Dow Corning Corporation

James Knauss, Hatcher-Sayre, Inc.

### U. S. ENVIRONMENTAL PROTECTION AGENCY REGION IV, ATHENS, GEORGIA

### **MEMORANDUM**

# MAY 22 1992

Howe Valley Landfill, Hardin County, Kentucky. SUBJECT:

Sampling and Analysis Plan Revision.

ESD Project No. 92E-452.

Dan Thoman, Regional Expert FROM:

Hazardous Waste Section

Environmental Compliance Branch Environmental Services Division

TO: Nestor Young, RPM

KY/TN Section

North Superfund Remedial Branch

Waste Management Division

THRU:

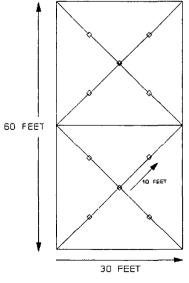
Environmental Compliance Branch Environmental Services Division

ATLANTA, GA

I have reviewed the revision to the Sampling and Analysis Plan and agree that the samples for TCLP analysis should be collected from the excavated and stockpiled soil. composite samples should be collected as illustrated in the following figure which is based on a waste pile measuring approximately 30 feet by 60 feet by 5 feet. Five aliquots of soil should be collected from each 30 foot by 30 foot grid,

from both depths specified in the SAP, and composited into one sample. Consequently, two composite samples will be collected from the 30 foot by 60 foot waste pile. Each sample will consist of ten aliquots of soil which have been composited. If a TCLP VOA sample is collected, it should be obtained from the center of the grid from the lower sample depth and placed directly into the sample container prior to mixing.

If you have any questions, please call me at 706-546-3172.



SAMPLE LOCATION

Bokey/Hall cc:



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

May 26, 1992

Mr. James D. Knauss, Ph.D. Project Manager Hatcher-Sayre, Inc. 3150 Custer Drive, Suite 301 Lexington, Kentucky 40517

RE: Howe Valley Landfill, Hardin County, Kentucky

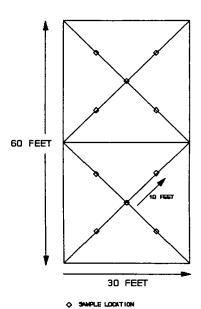
Dear Mr. Knauss:

This letter is submitted in response to your request to modify the Remedial Design (RD) Sampling and Analysis Plan. The proposed modification to the plan, as explained in your correspondence dated April 27, 1992, will be to collect composite samples from the contaminated soil stockpile instead of collecting insitu soil samples for TCLP analysis.

The EPA has considered this request and approves the modification. However, the composite samples should be collected as illustrated in the figure to the right — which is based on a waste pile measuring approximately 30 feet by 60 feet by 5 feet. Five aliquots of soil should be collected from each 30 foot by 30 foot grid, from both depths specified in your letter, and composited into one sample. Consequently, two composite samples will be collected from the 30 foot by 60 foot waste pile. Each sample will consist of ten aliquots of soil which have been composited. If a TCLP VOA sample is collected, it should be obtained from the lower sample depth in the center of the grid and placed directly into the sample container prior to mixing.

Please keep in mind that all sampling activities must conform with the sampling protocols outlined in EPA Region IV Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual (February 1, 1991).

Should you have any questions, please feel free to call me.



Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

muu

North Superfund Remedial Branch

pc: Ralph P. McKeen, Weston

James Mersereau-Kempf, Dow Corning



## REGION IV 345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

## FACSIMILE TRANSMITTAL COVER SHEET

| Number of Pages Sent (Including This Cover Sheet):  Please contact Nestor Young if this fax is received poorly or incomplete.  FROM:  Nestor Young, Remedial Project Manager  Kentucky/Tennessee Section  North Superfund Remedial Branch  Waste Management Division  Phone Number: (404) 347-7791  Fax Number: (404) 347-1695  FTS: 257-1695  NOTES:  ORIGINAL LETTER WILL BE MAILED VIA U.S. MAIL.   |              |   |
|--|--------------|---|
| Please contact Nestor Young if this fax is received poorly or incomplete.  FROM: Nestor Young, Remedial Project Manager Kentucky/Tennessee Section North Superfund Remedial Branch Waste Management Division  Phone Number: (404) 347-7791 Fax Number: (404) 347-1695 FTS: 257-7791 FTS: 257-1695  NOTES: ORIGINAL LETTER WILL BE MAILED VIA U.S. MAIL.  | Company/Or   | ganization:   |
| FROM: Nestor Young, Remedial Project Manager Kentucky/Tennessee Section North Superfund Remedial Branch Waste Management Division  Phone Number: (404) 347-7791 Fax Number: (404) 347-1695 FTS: 257-7791 FTS: 257-1695  NOTES: ORIGINAL LETTER WILL BE MAILED VIA U.S. MAIL.   | Phone Numb   | ver: 517-496-5813 Fax Number: 517-496-5419                    |
| Kentucky/Tennessee Section North Superfund Remedial Branch Waste Management Division  Phone Number: (404) 347-7791 Fax Number: (404) 347-1695 FTS: 257-7791 FTS: 257-1695  NOTES: ORIGINAL LETTER WILL BE MAILED VIA U.S. MAIL.  | Number of P  | ages Sent (Including This Cover Sheet):                       |
| Kentucky/Tennessee Section North Superfund Remedial Branch Waste Management Division  Phone Number: (404) 347-7791 Fax Number: (404) 347-1695 FTS: 257-7791 FTS: 257-1695  NOTES: ORIGINAL LETTER WILL BE MAILED VIA U.S. MAIL.  | Please conta | ct Nestor Young if this fax is received poorly or incomplete. |
| Kentucky/Tennessee Section North Superfund Remedial Branch Waste Management Division  Phone Number: (404) 347-7791 Fax Number: (404) 347-1695 FTS: 257-7791 FTS: 257-1695  NOTES: ORIGINAL LETTER WILL BE MAILED VIA U.S. MAIL.  |              |   |
| North Superfund Remedial Branch Waste Management Division  Phone Number: (404) 347-7791 Fax Number: (404) 347-1695 FTS: 257-7791 FTS: 257-1695  NOTES: ORIGINAL LETTER WILL BE MAILED VIA U.S. MAIL.   | FROM:        | , ,   |
| NOTES: ORIGINAL LETTER WILL BE MAILED VIA U.S. MAIL.   |              | North Superfund Remedial Branch                               |
| NOTES: ORIGINAL LETTER WILL BE MAILED VIA U.S. MAIL.   | Phone Numb   | ver: (404) 347-7791 Fax Number: (404) 347-1695                |
|  |              | FTS: 257-7791 FTS: 257-1695                                   |
| AT 114 Mar may make make a same as the sam | NOTES:       | DRIGNAL LETTER WILL BE MAILED VIA U.S. MAIL.                  |
| 1 HAVE FAXED THIS CORRESPONDENCE TO SIM KNAUSS ALSO.   |              | HAVE FAXED THIS CORRESPONDENCE TO JIM KNAUSS ALSO.            |
|  |              |   |

# MESSAGE CONFIRMATION

DATE:05/20/92 TIME:12:56

ID:EPA REGION IV WA

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# REGION IV 345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

# FACSIMILE TRANSMITTAL COVER SHEET

| Date: 5/20/92   | Time: : 55  | □ a.m. ⊠ p.m.                  |
|-----------------|---|--------------------------------|
| TO:             | MES KNAUSS  |                                |
|                 |   |                                |
| Company/Organiz | ation: HATCHER-9                                  | SAYRE, INC                     |
| Phone Number: _ | 606-271-0269                                      | Fax Number: 606 - 271 - 1204   |
| Number of Pages | Sent (Including This Cou                          | ver Sheet):lO                  |
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|                 | or Young, Remedial Pro                            | ,                              |
|                 | tucky/Tennessee Section<br>h Superfund Remedial B |                                |
|                 | te Management Division                            |                                |
| Phone Number:   | ,           | Fax Number: (404) 347-1695     |
|                 | FTS: 257-7791                                     | FTS: 257-1695                  |
| NOTES:          |   |                                |
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# MESSAGE CONFIRMATION

DATE:05/20/92 TIME:13:06

ID:EPA REGION IV WA

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### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

#### **MEMORANDUM**

Date:

May 20, 1992

To:

Ralph McKeen, P.E.

Senior Project Engineer

Roy F. Weston, Inc.

From:

Nestor Young

Remedial Project Manager

North Superfund Remedial Branch

Subject:

Howe Valley Landfill, Hardin County, Kentucky

Enclosed for your file are EPA's comments on the Draft Inorganic Design Plan.

Also enclosed is the first revision of the Treatability Study Work Plan (Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils). Please review this document to determine if all of the changes EPA required have been incorporated. Any additional comments you may have will also be appreciated. Please respond by May 29, 1992.

Call me if you have any questions.



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

May 20, 1992

Mr. James Mersereau-Kempf Environmental Geologist Dow Corning Corporation 3901 S. Saginaw Midland, Michigan 48686-0995

RE: Draft Inorganic Design Plan Review Comments Howe Valley Landfill, Howe Valley, Hardin County, Kentucky

Dear Mr. Mersereau-Kempf:

The U.S. Environmental Protection Agency has completed its review of the Draft Inorganic Design Plan for the Howe Valley Landfill. Overall, the document appears to be substantially in conformance with the requirements of the Consent Decree (CD) and Scope of Work (SOW). However, because the selected remedy for the inorganic contaminated areas is not a complicated technical remedy, and because it is being expedited, this document must fulfill the Remedial Design criteria and Remedial Action Work Plan requirements outlined in the SOW.

Specifically, the Consent Decree/SOW requirements not addressed in the document include (but are not limited to) the following:

- 1. Site access agreements/easements with adjacent property owners was not discussed.
- 2. A construction cost estimate accurate to within +15 percent to -10 percent shall be submitted.
- 3. A management plan shall be developed to indicate how the remedial activities are to be coordinated. The plan shall include an organizational chart showing key personnel and lines of authority during implementation of the remedy. Additionally, the plan shall include a procedure for the administration of construction changes and EPA review and approval of those changes.
- 4. A brief statement shall be included concerning community relations support for EPA. It is expected, at the discretion of the EPA Remedial Project Manager, that the Potentially Responsible Party (PRP) will assist EPA in community relations activities involving remedial actions at the site.

5. A Remedial Action Report shall be submitted to the EPA for review and approval at the conclusion of the remedial action. This report shall certify that all items outlined in the Record of Decision, Consent Decree (including the Scope of Work) and all approved plans, reports, and documents, have been completed. The report shall also certify that the remedy is functional and operating, and has met all performance standards and design specifications. The Remedial Action Report shall be certified by a Professional Engineer registered in the Commonwealth of Kentucky.

In addition to these Consent Decree issues, the EPA is providing specific technical comments on the Draft Inorganic Design Plan. Please review the enclosed comments and make the necessary changes to the document for re-submittal by June 5, 1992.

If you should have any questions please feel free to call me at  $(404)\ 347-7791$ .

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.

pc: Ralph P. McKeen Rick Hogan, KDEP

Jim Knauss, Hatcher-Sayre, Inc.

## The U.S. Environmental Protection Agency Review Comments for the Howe Valley Landfill Draft Inorganic Design Plan

## May 20, 1992

#### GENERAL COMMENTS:

- 1. The subsections of this plan labeled Analytical Report, Health and Safety Report, and Technical Specifications, need to be appropriately renamed Appendix A, B, and C respectively. These sections are referenced in the body of the report as appendices but are not labeled accordingly. Also, the Table of Contents should include the list of appendices in the report.
- The following general comments are related to the specific requirements for Remedial Designs, outlined in EPA guidance document titled Interim Final Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, February, 1990 (OSWER Directive 9355.5-01). Based on this EPA guidance document, the following sections should be included in the Inorganic Design Plan.
  - 1) Field Sampling Plan (FSP). The FSP defines the sampling and data gathering methods to be used in the construction project. This section should be used to discuss the sampling strategy, rationale, and methodology (see specific comment #4).
  - 2) Construction Quality Assurance Plan (CQAP). This section should address the site specific components of the quality assurance procedures to be used to ensure that the completed project meets the design criteria, plans, and specifications.
  - 3) Contingency Plan. This section is recommended to outline the contingencies proposed to protect the local population in the event of an accident or emergency. This would include addressing off-site transportation through populated areas.
- 3. Since this Remedial Design Plan will also serve as the Remedial Action Work Plan, the following specific elements should be included to ensure a sound approach to the remedial action.
  - 1) Tentative formulation of the Remedial Action Team, including key personnel, description of duties, and lines of authority in the management of construction activities. (See comment discussed in cover letter)
  - 2) Organizational chart, developing key personnel.

- 3) Strategy for implementing the Contingency Plan.
- 4) Procedure for data collection during the Remedial Action to confirm that the area is clean (i.e., FSP).
- 5) Requirements for project closeout (final inspections and closure report outline).
- 6) Include a phase operations plan which details the procedures and contractors used to perform each phase of work. Include a description of the contractors' experience and qualifications. Should also identify the transporter and disposal location and associated hazardous waste permits (see specific comments #3 and #5).

### SPECIFIC COMMENTS:

1. Page 25, Section 2.3.2.1 Organic Analysis

The third paragraph (page 25) indicates that 1,2-DCE occurred above the soil action level (SAL) at location 11H where the 3-foot samples showed concentrations of 15 mg/kg and 20 mg/kg (duplicate location). Table 3 on page 24 indicates that these results occurred at location 11E bottom (3 feet), not at 11H 3 feet. Please correct this discrepancy.

2. Page 30, Section 2.3.2.2 <u>Inorganic Analysis</u>

The third paragraph indicates that on February 7, an additional six surface and subsurface samples were taken at location 7D. Where are the results of these samples?

3. Page 36, Section 3.2.3 Waste Disposal

Please identify the RCRA approved disposal facility (and its location) where the waste will be sent to.

4. Page 37, Section 3.2.4 Monitoring /Sampling Requirements

Please provide detailed information concerning the sampling strategy which will be used to collect the composite soil samples (i.e. describe how the composite samples will be collected). Composite samples from the bottom of the excavation must also be collected to verify the vertical extent of the excavation. This information should be included in a separate section titled Field Sampling Plan (see general comment #2).

Cyanide has been identified in the Record of Decision (ROD) as a contaminant of concern associated with the heavy metal plating wastes disposed of at the site. A soil action level was also established in the ROD for this contaminant. Therefore, cyanide must be included for analysis in the verification samples collected. However, since analytical results obtained during post-removal soil investigations showed low levels of cyanide, then the EPA is requiring only half of the verification samples collected (in the inorganic contaminated areas) be analyzed for total cyanide. These results will be used to verify the absence of cyanide.

Also, EPA Region IV Environmental Services Division recommends air monitoring with an OVA or PID continuously during excavation, since organic compounds may be present (see comment number 9).

### 5. Page 38, Section 3.2.5 Materials and Equipment

How many dump trucks will be used to haul the contaminated soil to the RCRA facility? It appears from the text that only one truck will be used. If this is correct, then approximately 17 trips will be required of this one truck.

Please identify the trucking company that will be used. The company must be licensed and certified to transport hazardous waste in all states being traveled.

### 6. Page 38, Section 3.2.6 Performance Standards

The first sentence incorrectly states the basis for evaluating the performance of the remedy implemented. First, the results of the verification samples collected from the perimeter and bottom of the excavation will be used to determine if all the contaminated soil (above SALs) is removed. Second, although the EPA would appreciate Dow Corning returning the site to its "natural state" (i.e. removing and replacing soil contaminated above background concentrations), the remedy selected in the ROD requires reducing contaminant concentrations below health-based clean-up levels (SALs) outlined in the Consent Decree/Scope of Work (SOW).

The SOW specifies four contaminants of interest for the inorganic contaminated areas. These contaminants are chromium, copper, zinc, and cyanide. The corresponding soil action level for cyanide is 1,600 mg/kg.

### 7. Page 38, Section 3.3 Plans and Specifications

There is no Appendix C included with this report.

Are the "plans" mentioned in this section refer to the Inorganic Contaminant Removal Plan located in the Technical Specifications Section of this report? If so, then the plan was not signed and sealed by a Professional Engineer.

### 8. Page 38, Section 3.4 Permitting Requirements

This section of the report apparently discusses applicable or relevant and appropriate requirements (ARARs) in the context of obtaining permits. The following two comments are provided in regards to this issue:

- 1. The CERCLA citation is incorrect. The correct citation should be CERCLA §121(d). This section of CERCLA requires remedial actions to attain "...a level of or standard of control for [site contaminants] which at least attains such legally applicable or relevant and appropriate standard, requirement, criteria, or limitation." The purpose of the law is to ensure that remedial actions attain, at minimum, a degree of cleanup which assures protection of human health and the environment.
- 2. CERCLA §121(e) waives all permitting requirements from Federal, State, or local governments for any portion of removal or remedial actions conducted entirely on-site and in compliance with the cleanup remedy selected. However, in consideration of CERCLA §121(d), all activities conducted on-site must comply with the substantive intent of all legally enforceable ARARs, standards, criteria, or limitations. Further, it should be understood that any portion of the remedial action conducted off-site (such as transportation of the contaminated soil) must comply with all the regulations governing those activities, including obtaining all the required permits.

## 9. Page 39, Section 3.4.2 Air requirements

The last sentence in this section states: "all of the laboratory results indicate that there should be no toxic organic materials in the areas targeted for excavation..." Recall that the most recent sampling conducted in these areas did not include an analysis of organic contaminants. Therefore, the presence of these contaminants in the areas to

be excavated is uncertain. Please modify the text to reflect this point.

10. Page 40, Section 3.4.4 <u>Occupational Safety and Health Requirements</u>

The last sentence in this section states: "...special precautions will be taken to ensure that there are no vertical faces in the excavated area greater than 4 feet in height..." What provisions will be made if the verification sampling results indicate that the depth of the excavation must be four feet or greater?

11. Page 40, Section 3.4.5 Transportation Requirements

It is Dow Corning's responsibility to ensure that the transportation contractor is certified, licensed and competent to perform the task. Dow Corning must also ensure that all shipments are manifested and handled properly.

### HEALTH AND SAFETY PLAN

### GENERAL COMMENTS:

- 1. Given that the work is taking place in undeveloped areas, the HASP should address poisonous snakes, plants, insects, reptiles, and animals.
- 2. Identify the roles and responsibilities of Hatcher-Sayre, Inc. and their subcontractors during site operations.
- 3. Identify the qualifications of the Site Health and Safety Officer.
- 4. Include a Direct Reading Air Monitoring Instruments Calibration Record.
- 5. Please include a section for equipment decontamination.
- 6. Include Site Personnel and Certification Status (H&S Training) for:

Earthwork contractor's personnel Hatcher-Sayre, Inc. personnel Transporter's personnel

7. Every person on-site should read the HASP and document his/her review. The documentation should occur on a HASP approval/sign-off sheet attached to the plan.

### SPECIFIC COMMENTS:

1. Page 3, Section X, Ambient Air Monitoring

Specific action levels for personnel protection should be identified for organic levels on the PID and/or OVA meter. Associated changes in levels of protection if these action levels were reached during excavation should also be provided.

Since it is inorganic contaminants which are of major concern, EPA recommends that visible dust be used as an action level for personnel protection. Direct readings for chromium cannot be conducted, but if visible dust is generated and engineering controls are not effective, work must be stopped until such time that dust levels are controlled.

2. Page 4, Section XI, <u>Personnel Protection Requirements</u>

Please list the personnel protection equipment required for Level C.

3. Page 4, Section XIII, <u>Personnel Decontamination Procedures</u>

Please include decontamination procedures for Level C, in case of an upgrade to higher levels of personnel protection.

### TECHNICAL SPECIFICATIONS

### SPECIFIC COMMENTS:

1. Page 1, Section 1.3.1, Material Removal

Clarification of the second sentence is required. This sentence states that "Areas which require large amounts of material to be removed are noted on the drawings." Are there other small areas which are not noted on the drawings? If so, where are they? If not, rewrite the sentence to correct this confusion.

2. Page 2, SectionS 1.3.4 and 1.4.4 Stockpiling

A 30 mil HDPE or equivalent is recommended to line the bottom of the storage area. After placement of the 30 mil liner, a 12-inch layer of sand should be placed. Upon the completion of the work, the liner and sand must be removed and disposed of as a hazardous material. After removal of the temporary holding cell, confirmation samples from the surface area must be taken in order to declare the area clean.

Since access to the site is not limited by any means, then provisions for restricting access to the contaminated soil stockpile should be made.

### 3. Page 7, Section 2.1 Scope

The last sentence states that revegetation procedures will begin only after the site has been deemed "clean" of both organic and inorganic contaminants. There is no apparent reason to wait until the organic contaminated areas are "cleaned", to revegetate the inorganic contaminated areas. It is important to revegetate the excavated areas as soon as they are backfilled, since this will alleviate the problem of erosion and storm water runoff. The EPA believes that the inorganic contaminated areas should be revegetated immediately after the contaminated soil is removed and the areas backfilled.

5. A section should be developed to give guidance to the contractor for handling storm water that enters the excavation. The water that enters the excavation should be temporarily contained until the confirmation sample results are returned. If they return clean, then the material should be handled as storm water; if not, the water should be sampled and disposed of properly.

# U. S. ENVIRONMENTAL PROTECTION AGENCY REGION IV, ATHENS, GEORGIA

### MEMORANDUM VIA CC-MAIL

5-14-92

SUBJECT: Howe Valley Landfill, Hardin County, Kentucky.

Sampling and Analysis Plan Revision.

ESD Project No. 92E-452.

FROM: Dan Thoman, Regional Expert

Hazardous Waste Section

Environmental Compliance Branch Environmental Services Division

TO: Nestor Young, RPM

KY/TN Section

North Superfund Remedial Branch

Waste Management Division

THRU: William R. Bokey, Chief

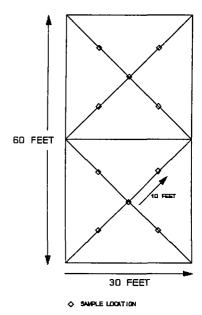
Hazardous Waste Section

Environmental Compliance Branch Environmental Services Division

I have reviewed the revision to the Sampling and Analysis Plan and agree that the samples for TCLP analysis should be collected from the excavated and stockpiled soil. However, the composite samples should be collected as illustrated in the following figure which is based on a waste pile measuring approximately 30 feet by 60 feet by 5 feet. Five aliquots of

soil should be collected from each 30 foot by 30 foot grid, from both depths specified in the SAP, and composited into one sample. Consequently, two composite samples will be collected from the 30 foot by 60 foot waste pile. Each sample will consist of ten aliquots of soil which have been composited. If a TCLP VOA sample is collected, it should be obtained from the center of the grid from the lower sample depth and placed directly into the sample container prior to mixing.

If you have any questions, please call me at 706-546-3172.



cc: Bokey/Hall

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### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

### **MEMORANDUM**

Date:

May 12, 1992

To:

File

From:

Nestor Young

Remedial Project Manager

North Superfund Remedial Branch

Subject: Howe Valley Landfill

312-886-6136

spoke to Mr. Richard Traub, EPA Region V Michigan RCRA Coordinator, about Michigan's requirements for treatability studies. He said that he believes the State has not yet adopted all Federal RCRA regulations; therefore, the treatability study exemptions in the Federal regs would not apply in Michigan (the State probably has stricter requirements). He told me to call Ms. Rhonda Hall at the State to find out what the State requires.

I called Rhonda Hall (517-373-2730) and she confirmed that the State has not adopted all Federal RCRA regulations yet -- but that they are in the process of doing so (at least those exemptions related to treatability studies). She also told me that treatability studies conducted on hazardous wastes are illegal in the State of Michigan. The State does not currently have any regulations governing treatability studies. To legally conduct treatability studies in Michigan, a facility must apply for a TSD permit (which may take up to a year to get), or apply for a special permit to perform innovative research testing (which is difficult to get). However, if the waste was not a RCRA hazardous waste, then these regulations would not apply. Therefore, one solution to this problem is to ship clean soil from the site to the Dragun Lab, and spike the sample at the laboratory. Rhonda Hall could not tell me if this would be acceptable to the State. She told me to call Mr. Ken Burda (517-373-0530) of the State's Hazardous Waste Section to find out.

I spoke to Ken Burda (4:15 p.m.) about this problem and he said that if the waste was not hazardous then there should be no I should test the soil sample for TCLP and ignitability (since the original waste was hazardous because of its ignitability characteristic) to determine if it is a haz waste. The State of Michigan has two other TCLP criteria (not covered in the federal

Memo to file From Nestor Young Howe Valley Landfill May 12, 1992

regs) for copper (100 mg/l) and zinc (500 mg/l). He will call me back after he talks to the someone in the Michigan Solid Waste Division to determine if there are any other regulations or requirements that we need to be aware of.

Ken Burda called back 5/13/92 to let me know that there are no solid Waste concerns or regulations that we need to account for.

5.13.92

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# EPA, REGION IV LEGAR DEPARTMENT

May 4, 1992

May 5 2 05 PH '92 (517) 496-4710

Writer's Direct Dial

DATE/THE RECEIVED VIA FEDERAL EXPRESS

Ms. Brooke Dickerson Office of Regional Counsel US EPA Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

RE: Easement for Howe Valley Landfill Superfund Site, Howe Valley, Kentucky

Dear Brooke:

Enclosed is a copy of the executed easement for the Howe Valley Site. Dow Corning Corporation filed the original with the Hardin County Clerk's Office today.

Dow Corning is having little success in contacting the owners of the property adjoining the Dow Corning property at Howe Valley. To the best of our knowledge, a Mr. Joseph and Mrs. Lillie Robey from Boston, Kentucky still own the property. The Robeys have been acting through an agent, a Mr. Paul Edlin from New Haven, Kentucky, to sell the property.

Dow Corning is in the process of tracing that property's status at the Clerk's office, as well as trying to contact the owners of the property to resume discussions related to Dow Corning's purchase of that portion of the property that contains the Site. To date, the Robeys and Mr. Edlin have only been willing to discuss selling their entire holding at a very inflated price.

Given our efforts to date and our lack of success in convincing the Robeys or Mr. Edlin to sell a reasonable portion of their property, Dow Corning may need the assistance of the United States Government in obtaining control of that land. Without such assistance, Dow Corning Corporation may not be able to obtain control of the entire Site covered by the former landfill. In order for Dow Corning to purchase the entire 40+ acres of land owned by the Robeys, Dow Corning would need assurance from EPA that it will not be held liable pursuant to CERCLA for any contamination on that land beyond the boundary of the former landfill and not caused by the former landfill.

### **DOW CORNING CORPORATION**

(517) 496-6354 (II) Telex: 189806000

Please call me at you earliest convenience to discuss the situation related to the neighboring landowners.

Sincerely,

Edward C. Ovsenik

Staff Attorney

Admin Law C01242

**Enclosure** 

ECO/eo HOWEVALL\EASEFINA.tra

DOW CORNING CORPORATION, a corporation organized and existing under the laws of the State of Michigan, having its principal place of business in Midland, Michigan (hereinafter referred to as "DOW CORNING"), in consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration, does hereby grant and convey to the United States of America, its successors or assigns, and its representatives, including, but without limitation, the US Environmental Protection Agency, and its and their employees and contractors (collectively hereinafter referred to as "USA"), an easement for access to the property described below for the purposes of monitoring and implementing the activities required under and contemplated by the Consent Decree entered between DOW CORNING and USA, Civil Action No.: C-91-0215 L-A. A Certified Copy of this Consent Decree has been filed with the Clerk's Office in Hardin County, Kentucky and is referenced in the deed for the property described below.

The easement herein granted pertains to that portion of certain real property conveyed to DOW CORNING CORPORATION by Lawrence Hall and Sharon Hall in Deed Book 676 page 164 of the Clerk's Office in Hardin County, Kentucky, which is included in the 11 acre Superfund site known as the Howe Valley Landfill Superfund Site, as that site is defined in the above-referenced Consent Decree. The property to PROPERTY) which the easement pertains (the consists approximately nine (9) acres located on the east side of Tom Duvall Road in Hardin County, Kentucky. The USA is granted the right of ingress and egress over and upon the PROPERTY in the exercise of the rights and privileges herein granted, provided however, that in exercising such rights of ingress and egress, USA, whenever practical to do so, shall use regularly established highways, streets or roads.

All of **DOW CORNING's** rights of recourse are clearly set forth in the Consent Decree, and nothing in this easement shall limit those rights.

This easement shall automatically cease upon delivery to **DOW CORNING** of the Certification of Completion of the Work, as defined in Section XVI of the Consent Decree. Provided however, that nothing in this easement shall be deemed to limit the power and authority of the **USA** to take, direct or order all appropriate action to protect human health and/or the environment or to prevent, abate or minimize an actual or threatened release of hazardous substances on, at or from the **SITE**.

IN WITNESS WHEREOF, **DOW CORNING** has caused this right of way and easement to be executed this  $\frac{\partial 3'^d}{\partial x^d}$  day of April, 1992.

Signed, Sealed and Delivered in presence of:

DOW CORNING CORPORATION

Susan of Dirice

By: Cocatiend

Title: NR. DIR. OF INTG. # ENGR.

C. W. Lacefield

On this 13 M day of April, 1992, before me a Notary Public in and for the State of Michigan, personally appeared for the State of Michigan, personally appeared, known to me to be the person who executed the Request above on behalf of said Corporation and acknowledged to me that he executed the same for the purposes stated therein.

Notary Public

My Appointment Expires



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

# REGION IV 345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

# **FACSIMILE TRANSMITTAL COVER SHEET**

|              | $\sqrt{92}$ Time: $2.00$ $\square$ a.m. $\sqrt{2}$ p.m.  |
|--------------|--|
|              | KENNETH SKAHN, P.E.  |
| HAZARDO      | OUS SITE CONTROL DIV. / DESIGN & CONSTRUCTION MEMT BRANCH  |
| Company/O    | Organization: U.S. EPA   |
|              | hber: 703-308-8395 Fax Number: 703-308-8389  Pages Sent (Including This Cover Sheet): 4  |
|              | rages com (anomany and core energy)  |
| Please conta | act Nestor Young if this fax is received poorly or incomplete.   |
|              |  |
|              |  |
| FROM:        | Nestor Young, Remedial Project Manager<br>Kentucky/Tennessee Section<br>North Superfund Remedial Branch<br>Waste Management Division |
| Phone Num    | hber: (404) 347-7791 Fax Number: (404) 347-1695<br>FTS: 257-7791 FTS: 257-1695   |
| NOTES:       |  |
|              |  |
|              |  |
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|              |  |
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|              |  |
|              |  |

Suppose one of the TCLP analysis fails?

2) Four samples is not enough - it should be one sample per 20 yd3

Sent by Fax only



### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

#### **MEMORANDUM**

Date:

May 11, 1992

To:

Kenneth Skahn, P.E.

Hazardous Site Control Division

Design & Construction Management Branch U.S. Environmental Protection Agency

From:

Nestor Young

Remedial Project Manager

North Superfund Remedial Branch

Subject: Howe Valley Landfill Inorganic Design Plan

The PRP's contractor, Hatcher-Sayre, Inc., has submitted a request to modify the Sampling and Analysis Plan and Inorganic Design Plan. Attached for your review and comment is this request.

The approved Sampling and Analysis Plan (page 6) requires that insitu soil samples "with the highest metal concentrations from each area will be composited and analyzed by the TCLP to assess the need for treatment prior to the disposal of the soil at an approved hazardous waste landfill." The Draft Inorganic Design Plan, however, does not address this issue directly.

Their request is to obtain composite samples from the contaminated soil that will be excavated and stockpiled -- instead of collecting in-situ soil samples. The results of this analysis will be used to determine disposal requirements for the soil. It is estimated that approximately 367 cubic yards of contaminated soil will be disposed of.

Please review and comment on the attached letter/proposal, and respond by May 18, 1992.

If you have any questions, or you would like to discuss this issue further, please don't hesitate to call me at 8-404-347-7791. Also, if it will be inconvenient to respond by May 18, please let me know.



### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

#### REGION IV

# 345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

### MEMORANDUM

Date:

May 11, 1992

To:

Dan Thoman, Regional Expert

Hazardous Waste Section

Environmental Compliance Branch

U.S. EPA Environmental Services Division

From:

Nestor Young

Remedial Project Manager

North Superfund Remedial Branch

Subject: Howe Valley Landfill Inorganic Design Plan

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# **The Dragun Corporation**

30445 Northwestern Hwy. • Suite 260 • Farmington Hills, MI 48334 • 313-932-0228 • FAX 313-932-0618

April 30, 1992

Nestor Young Remedial Project Manager Kentucky/Tennessee Section North Superfund Remedial Branch USEPA Region IV 345 Courtland Street, N.E. Atlanta, GA 30365



RE: Treatability Study Work Plan

Howe Valley Site, Hardin County, KY

Dear Mr. Young:

Enclosed are eight copies of the "Treatability Study Work Plan for the Howe Valley Site, Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils".

Please contact me or Mr. Mersereau-Kempf if you have any questions.

Sincerely,

THE DRAGUN CORPORATION

James Dragun, Ph.D.

Soil Chemist

cc: Mr. James Mersereau-Kempf, Dow corning Corporation

Mr. James Knauss, Hatcher-Sayre





April 27, 1992

Mr. Nestor Young Remedial Project Manager U.S. EPA, Region IV 345 Courtland St. NE Atlanta, GA. 30365

> Re: Howe Valley Landfill Hardin County, Kentucky RD SAP Revision (Inorganics) Job No. 0064-001

Dear Mr. Young:

In the Final Remedial Design (RD) Sampling and Analysis Plan (SAP) for the Howe Valley Landfill, a composite TCLP analysis was planned on the inorganic samples containing the highest metal(s) concentrations (see page 6, Section 2.3.3 Soil Sampling Techniques). Due to a larger contaminated area than anticipated, the considerable variation in analytical results and the TCLP requirements of the landfills, we are requesting a revision to this planned sampling procedure. Considering the above items, it appears that it would be more appropriate to collect composite samples from the contaminated soil stockpile for TCLP during the time when the contaminant removal verification sampling is conducted.

It is anticipated that the stockpile would be about 60 feet long, 30 feet wide and 5 feet high. For every 1,000 square feet of surface area, four aliquots will be collected with a decontaminated stainless steel auger; two from the near surface and two below middepth. The sampling locations (four anticipated) would be approximately 10 feet apart width-wise and 20 feet apart length-wise. These aliquots will be placed in a decontaminated stainless steel pan, mixed per EPA's SOP and composited into a single sample for TCLP metal analysis. A minimum of two composited samples will be collected from the stockpile. The samples will be submitted to Wadsworth/Alert Laboratories in North Canton, Ohio under chain-of-custody for analysis of chromium by SW846 Method 6010.

Mr. Young April 27, 1992 Page 2



If you have any questions or need additional information, please give me a call. We appreciate your immediate attention to this matter.

Sincerely, HATCHER-SAYRE, INC

James D. Knauss, Ph.D.

Project Manager

cc: Jim Mersereau-Kempf

Ed Ovsenik Carroll Coogle

JDK/bh



### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

April 15, 1992

Mr. James Mersereau-Kempf Environmental Geologist Dow Corning Corporation 3901 S. Saginaw Midland, Michigan 48686-0995

RE: Treatability Study Review Comments

Howe Valley Landfill, Howe Valley, Hardin County, Kentucky

Dear Mr. Mersereau-Kempf:

The U.S. Environmental Protection Agency has completed its review of the treatability study (Bench-Scale Teat Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils) for the Howe Valley Landfill. Generally, the document lacks an acceptable level of detail. Attached are EPA's review comments for your consideration and response.

Please make the necessary changes in accordance with the comments provided, and submit a revised document by April 30. In consideration of the project schedule, the EPA expects that no further comments on the treatability study will be necessary, and that the revised document will be approved if the modifications are acceptable and consistent with the comments provided.

If you should have any questions please feel free to call me at (404) 347-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

pc: Ralph P. McKeen, Weston

# The U.S. ENVIRONMENTAL PROTECTION AGENCY Review Comments for the Howe Valley Landfill Remedial Design Treatability Study

Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils

### April 15, 1991

### GENERAL COMMENTS:

- 1. The title of the document should include the phrase: Treatability Study Work Plan for the Howe Valley Site.
- 2. The description of the test protocol lacks detail. The document does not include a discussion of the rationale for determining the design parameters of the test. How will the laboratory study simulate field conditions?

The specific comments outlined below will identify elements of the study that needs to be clarified and/or explained in further detail.

- 3. A <u>brief</u> introduction section is needed to explain the scope and focus of this study as it relates to the remedy selected for the site. A very brief discussion of the background of the site, as well as a description of the contamination present and site conditions, should also be included. This section is mainly to present the reader with an understanding of the overall purpose of the study, and its significance to the Remedial Design/Remedial Action process.
- 4. It is not clear how many unique test samples will be taken for bench scale testing. The number of samples and sample locations should be sufficient and representative of the soils in the contaminated area to the extent practical, and should be specified.

### SPECIFIC COMMENTS:

### General Description

- Please define what are "relatively high concentrations" of the VOCs.
- Please describe the glass containers in which the soil will be placed. Are these containers open or closed?
- 3. What is the rationale for maintaining the soil at the specified moisture content?

4. It appears that a total of four tests will be conducted: two tests at approximately 5% soil moisture, and two tests at approximately 40% soil moisture. Please clarify.

Furthermore, there are inconsistencies in the soil moisture cited for the dryer soil and wetter soil. Low range moisture contents cited are approximately 5% on page 3, 3% to 5% on page 4, and 10% on page 5. high range moisture contents cited are approximately 40% on page 3, 25% to 30% on page 4, and 50% on page 5. Please explain or correct these inconsistencies.

- 5. What is the rationale for maintaining the chamber at room temperature? What is the rationale for maintaining the relative humidity in the chamber greater than 75% and less than 30%?
- 6. It is stated that "the study will utilize two replications of each (soil) unit." Are triplicates more suitable for statistical evaluation?
- 7. Describe how the endpoint of the experiment is determined. What are the target VOC concentrations?
- 8. How does this study account for the volatilization that occurs when the soil is transferred into the mixing bowl?
- 9. Where is this study being performed? Is it being performed at the Dragun Laboratory?

### Special Materials

- 10. Please describe the spiking procedure for PCE. What provisions are made for determining whether the PCE is well mixed in the soil? How are the losses avoided or taken into account during the addition of the spike? How is the spiked VOC concentration confirmed? Is adequate time provided to allow sorption processes to equilibrate (if slow-diffusion process is operative, sorption may be inadequate).
- 11. Why was a 100 ppm spike concentration chosen?
- 12. What type (make and model) of photoionization detector will be used? What calibration gas will be used?

Will the correct lamp energy be used for the contaminants of interest? Water vapor in the sample will significantly interfere with the concentration being reported. How will this effect be corrected when sampling the chamber air at 75% RH?

### Procedure

- 13. Please describe how the soil from the site will be collected and prepared for shipment.
- 14. How is the moisture content of the soil determined prior to the experiment? How are the water make-up requirements determined during the experiment? How is the tap water added and mixed? Will the constituents of the tap water interfere with the study?
- 15. How will the soil be placed into the glass container -- will the soil be packed or loosely spread?
- 16. How (and/or why) was the mixing time determined to be seven seconds?
- 17. How will the RH below 30% be controlled in the chamber? Will the temperature and humidity inside the chamber be automatically controlled?
- 18. Will the air inside the chamber be vented or recirculated? How will the VOC concentrations in the chamber air be measured with the photoionization detector?
- 19. Please define "soil air"?
- 20. What will determine the endpoint of the study? What is the basis for terminating the study after only one month? There is no information to suggest that sufficient volatilization would have occurred after 30 days, or that the volatilization rates would be adequately quantified.
- 21. A custody seal should be placed on each sample container and within the strapping tape used to secure the shipping container.

- 22. The analytical methods proposed should be stated. The name of the analytical laboratory should also be stated.
- 23. A tabular summary of the experimental program would be helpful to aid in the readers' understanding.

### Reports

24. This section should generally describe the deliverables to be submitted (and when they will be submitted). How will the test data be presented (i.e. tables, graphs) and interpreted? Is a succinct discussion of the findings and conclusions without discussions describing test objectives, test apparatus, test execution, quality assurance data, adequate to permit an unbiased review?

### APPENDIX A: QUALITY ASSURANCE/QUALITY CONTROL PLAN

### GENERAL COMMENTS:

- 1. The quality assurance section (Appendix A) also lacks site specific detail. There is no mention of the specific analytical methods to be performed.
- 2. Has the Dragun Corporation's QA/QC procedures been reviewed and approved by the EPA? If so, Appendix A should reflect this.
- 3. The protocol states that the data indicators for precision and accuracy will be <u>based upon Contract Laboratory Program (CLP) criteria</u>. This statement implies that there are deviations from the CLP criteria, perhaps minor ones. What are the deviations from the procedures? The criteria for precision and accuracy should be tabulated in the protocol for each target compound analyzed and each instrument used.
- 4. The data indicator, completeness, is not addressed in Appendix A. What completeness criteria will be used to validate the experimental measurements?
- 5. The specific analytical procedures should be cited by method number.

# TELECOPY TRANSMITTAL FORM

# ROY F. WESTON, INC.

6021 Live Oak Parkway Norcross, Georgia 30093 Confirmation Telephone (404) 448–0644 Telecopy Telephone (404) 368–1168

| TO:              | NESTON YOUNG                              |
|------------------|---|
| TELECOPY NUMBER: | - 347- 1695                               |
| FROM:            | RALPH MSKEN                               |
| DATE:            | 17 April                                  |
| NUMBER OF PAGES: | 9   |
|                  | (including transmittal cover sheet)       |
| MESSAGE:         | - Comments to the Howe VAlley             |
|                  | ORGANIC DESIGN PLAN.                      |
| - سد             | HARDCOPY to follow in MAIL.               |
|                  |   |
|                  | Raph                                      |
|                  |   |
|                  |   |
|                  | IF ALL PAGES ARE NOT RECEIVED PLEASE CALL |
|                  | AT (404) 448-0644                         |



April 17, 1992

Mr. Nestor Young Remedial Project Manager U.S. Environmental Protection Agency, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

RE: Draft Organic Remedial Design Review Comments
Work Assignment No. 17-4XN8
Howe Valley Landfill Site
Howe Valley, Hardin County, Kentucky
Contract No. 68-W9-0057
Document Control No. 4400-17-ABSW

## Dear Mr. Young:

Roy F. Weston, Inc., (WESTON) has prepared the attached comments on the Draft Organic Remedial Design as specified in the Scope of Work for its Remedial Design/Remedial Action (RD/RA) oversight activities at the Howe Valley Landfill Site. WESTON is providing RD/RA oversight and project assistance to the U.S. Environmental Protection Agency (EPA), Region IV, under EPA Contract No. 68-W9-0057. The attached comments are in response to the "Draft Preliminary Organic Design Plan", prepared for Dow Corning Corporation by Hatcher-Sayre, Inc., March 18, 1992.

The Organic Remedial Design submitted by Hatcher-Sayre includes prior data acquisition and analytical results, Health and Safety Plan, and specifications to remediate the organic contaminated soils. WESTON's review focused on consistency with respect to the objectives of the EPA Record of Decision (ROD) and the ARARS contained within the ROD. OSWER Directive 9355.5-01 "Interim Final Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, February 1990" was also utilized as a guidance document in the review process.



Mr. Nestor Young April 17, 1992 Page 2

If you have any questions concerning these comments, please call Randy Ferguson or me at (404) 448-0644.

Sincerely,

Roy F. Weston, Inc.

Ralph P. McKeen, P.E.

Work Assignment Manager

/rpm Enclosure

cc: Charles Swan, EPA, Region IV
L. Lewis, EPA, Region IV
R.R. Ferguson, WESTON

Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: April 1992 Page: 1 of 6

### **ATTACHMENT**

Contract No. 68-W9-0057
Work Assignment No. 17-4XN8
Document Control No. 4400-17-ABSW

### ORGANIC REMEDIAL DESIGN REVIEW

The proposed remediation plan is based on the assumption that the pilot treatability study yields favorable results for remediating the soil via on-site aeration. The overall conceptual approach described in this plan generally appears adequate to fulfill the objectives described in the ROD. WESTON has made some specific comments and suggestions which are provided herein. Sections of this plan are the same as those presented in the inorganic remedial design for which WESTON has previously reviewed and submitted comments (April 6, 1992, Document Control No. 4400-17-ABRZ). For consistency, comments relative to these sections have been reiterated where appropriate.

# 1. Subsection 2.3.2.1 "Organic Analysis"

Page 25, Paragraph 2, indicates that 1,2-DCE occurred above the soil action level (SAL) at Location 11H where the 3-foot samples showed 1,2-DCE at 15 mg/kg and 20 mg/kg (duplicate location). Table 3 on page 24 indicates that these results occurred at location 11E bottom (3 feet), not at 11H 3 feet. Correct the discrepancy between the data.

# 2. Subsection 3.2.4 "Monitoring/Sampling Requirements"

Page 35, Paragraph 1 states that a headspace analysis will be utilized for field screening after aeration of each excavated lift. Although this is only a screening tool, a description of the method and technique should be provided. On page 42 of the EPA Record of Decision, it is remarked that remaining contamination following the 1988 on-site soil aeration pilot study may have been a result of improper headspace analysis procedures. Although the EPA's Environmental Services Division does not have written guidelines for this procedure, it should be described for evaluation. Also, this procedure should be outlined for field personnel to follow to ensure consistency throughout the project.

Comments/Responses
Howe Valley Landfill Site
Howe Valley, Hardin County, KY
Revision: 0
Date: April 1992
Page: 2 of 6

3. The subsequent sections of this plan (i.e., health and safety plan, technical specifications) need to be appropriately labeled as Appendix A, B, respectively. These sections are referenced in the Organic Design Plan as appendices but are not labeled accordingly. Also, the Table of Contents should include the list of appendices in the plan.

### HEALTH AND SAFETY PLAN

- 1. Given that the work is taking place in undeveloped areas, the HASP should address poisonous snakes, plants, insects, reptiles, and animals.
- 2. Indicate a projected start date and end date.
- 3. Identify the roles and responsibilities of Hatcher-Sayre, Inc. and their subcontractors during site operations.
- 4. Identify the qualifications of the Site Health and Safety Officer.
- 5. Section V, Subsection E ("Physical Hazards") indicates that heat related symptoms may be encountered due to the time of year during excavation. This section should provide a work cycle management program which list guidelines for the length of work periods for the different levels of personnel protection and air temperatures. Accordingly, Section IX "Medical Surveillance" should detail the physiological parameters (heart rate, oral temperature) that will be used to govern the length of rest period.
- 6. Section VII "Job Activities in Work Plan"

This section identifies soil excavation but does not address the depths of excavation and the fact that they will be left open until treated material is replaced. The anticipated depths are assumed to average 5 feet. Potential hazards associated with on-site traffic around the open excavations should be noted and potential shoring requirements. We recommend that orange plastic barrier fencing be placed around the perimeter of the fencing until it is backfilled.

Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: April 1992 Page: 3 of 6

7. Section X "Ambient Air Monitoring"

Specific action levels for personnel protection should be identified for organic levels on the PID and /or OVA meter. Also, associated changes in levels of protection if these action levels were reached during excavation should be provided.

- 8. Include a Direct Reading Air Monitoring Instrument Calibration Record.
- 9. Include a section for equipment decontamination.
- 10. Include Site Personnel and Certification Status (H&S Training) for:
  - Earthwork contractor's personnel
  - Hatcher-Sayre, Inc. personnel
- 11. Every person on-site should read the HASP and document his review. The documentation should occur on a HASP approval/signoff sheet attached to the plan.

### TECHNICAL SPECIFICATIONS

1. Section 1.5.3 "Lifts"

Clarification of the second sentence is required. The sentence says "Placement of the material back into the excavated trenches will also be in approximately horizontal lifts in thickness deemed appropriate by the Engineer". Does this mean approximately 6 inch lifts? Also, what factors (soil conditions) will be considered in evaluating the appropriate thickness?

2. Sections 1.5.6 "Compaction"

This section should specify the type of compaction equipment to be used. Also the second sentence states "the material will be compacted to obtain an acceptable density ... " What is an acceptable density? A density range should be provided as well, as a test method for determining this value.

Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: April 1992 Page: 4 of 6

### 3. Section 1.5.7 "Decontamination"

The last sentence reads that decontamination water will be properly disposed of following analysis for 1,2-DCE, 1,1,1-TCA and PCE. Please elaborate on the proper disposition method. If it is to be sent off-site, what is the name and location of the treatment facility?

### 4. Section 2.1 "Scope"

The last sentence reads that revegetation procedures will begin only after the site has been deemed "clean" of both organic and inorganic contaminants. It is important to facilitate revegetation in excavated areas as soon as they are backfilled. This will reduce the problem of erosion and site runoff. For these reasons, as soon as the inorganic material is excavated and the area backfilled, the contractor should be required to revegetate immediately.

- 5. A section should be developed to give guidance to the contractor for handling stormwater that enters the excavation. The water that enters the excavation should be temporarily contained until the confirmation sample results are returned. If they return clean, then the material should be handled as stormwater; if not, the water should be sampled and disposed of properly.
- 6. The oversize map located in the plastic sheet in the back of the plan does not show a typical cross-section of the trench excavation. This would be beneficial in evaluating the need for shoring in accordance with Subpart P of 29 CFR Part 1926.

This map does indicate the sequence of trench excavations. It is not clear from this map or Section 1.5.3 whether the trenches will be excavated and backfilled prior to excavating the next trench or excavated all at once.

### GENERAL COMMENTS

The following general comments pertain to the review relative to EPA guidance document OSWER Directive 9355.5-01 "Interim Final Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, February, 1990".

Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: April 1992 Page: 5 of 6

The following sections are missing as specified in the above referenced guidance document.

- 1) Field Sampling Plan (FSP). This document defines the sampling and data gathering methods to be used in the construction project. Section 3.2.4 of the "Organic Design Plan" describes the sampling of the lifts after aeration, but not the sampling of the trenches following excavation to determine that sufficient volume has been removed. This activity should be described further in the FSP.
- 2) Construction Quality Assurance Plan (CQAP). This plan should address the site specific components of the quality assurance to ensure that the completed project meets the design criteria, plans, and specifications.
- 3) Contingency Plan. This plan is also recommended to protect the local affected population in the event of an accident or emergency. This would include addressing the off-site transportation through populated areas.

It is WESTON's understanding that this Remedial Design submission was also to serve as the Remedial Action Work Plan. The following specific elements should be included to ensure a sound approach to the remedial action.

- Tentative formulation of the Remedial Action Team, including key personnel, description of duties, and lines of authority in the management of construction activities.
- Organizational chart, identifying key personnel.
- Method to implement the Construction Quality Assurance Plan, including criteria and composition of the quality assurance team.
- Schedule for the Remedial Action (project start date, end date). Also include key phases of work.
- Strategy for implementing the Contingency Plan.
- Procedure for data collection during the Remedial Action to confirm that the trenches are clean (i.e., FSP).
- Requirements for project closeout (final inspections and closure report outline).

Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: April 1992 Page: 6 of 6

• Include a phased operations plan which details the procedures and contractors used to perform each phase of work. Include a description of the contractors' experience and qualifications. Should also identify the transporter and disposal location of potentially contaminated decontamination water and associated hazardous waste permits.

PHILLIP J. SHEPHERD SECRETARY



BRERETON C. JONES
GOVERNOR

# COMMONWEALTH OF KENTUCKY NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FRANKFORT OFFICE PARK 18 REILLY ROAD FRANKFORT, KENTUCKY 40601

April 16, 1992

Mr. Nestor Young, RPM U.S. Environmental Protection Agency 345 Courtland Street, N.E. Atlanta, GA 30365

RE: Howe Valley Landfill NPL Site Hardin County, KY Draft Preliminary Organic Design

Dear Mr. Young:

The State has reviewed the Draft Preliminary Organic Design Plan for the site and has the following comments:

- 1. As the excavation for soil aeration proceeds, soil samples should be taken from the walls (i.e. sides) on the perimeter of the area designated 'organic waste area' and analyzed. This will help in determining if the waste area is fully delineated.
- In view of the site geology, will the collection ponds be constructed with a liner?
- 3. If the arrows showing the temporary diversion ditches (drawing 0064-23) are indicative of the flow direction, a review of the design of the ditch along the south and southwest edges of the site may be required.
- 4. The proposed time schedule seems to be in order and we are interested in early execution of RA work. To this end, proper scheduling of the inorganic RA (in view of the fact that an inorganic hot spot is in a stockpile area proposed for organic RA) and expediting the treatability study may be effective. Also, we would suggest that the next deliverable be the prefinal design rather than an intermediate design, pending of course the treatability test outcome and evaluation report (and acceptance).

Mr. Young Page two April 16, 1992

- 5. Overall, there is no new information to form a basis for the preliminary organic design. Has a determination been made that there need be no further investigations at this stage? Is it proposed to recon Mr. Goodman's property and analyze any spring water before starting RA? The preliminary design, specifically 3.2 Design Criteria, should have addressed all aspects, including our comments 1 and 2.
- 6. General: The soil analyses data and figures are the same as those presented already in inorganic design. We would certainly appreciate, and it would add clarity and save a lot of time, if data, tables or figures are specifically annotated with the date they were first presented and a remark on where first presented.

We do look forward to speedy action at this site. If you have any questions, please call me at (502) 564-6716.

i i A

Rick Hogan, Supervisor Remedial Action Section

RH:kb

# TELECOPIER TRANSMITTAL

# DEPARTMENT FOR ENVIRONMENTAL PROTECTION 18 Reilly Road Frankfort, Kentucky 40601

| TO:                     | Destor       | Joung -      | ·                 |             |
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# U. S. ENVIRONMENTAL PROTECTION AGENCY REGION IV, ATHENS, GEORGIA

#### MEMORANDUM VIA CC-MAIL

DATE 4-16-92

SUBJECT: Howe Valley Landfill Site, Howe Valley, Kentucky,

Organic Design Plan and Inorganic Design Plan.

ESD Project No. 92E-367.

FROM: Dan Thoman, Regional Expert

Hazardous Waste Section

Environmental Compliance Branch Environmental Services Division

TO: Nestor Young

KY/TN Section

North Superfund Remedial Branch

Waste Management Division

THRU: William R. Bokey, Chief

Hazardous Waste Section

Environmental Compliance Branch Environmental Services Division

I have reviewed the above mentioned documents and have the following comments:

#### Organic Design Plan

- 1. The treatment method described in the organic design plan is <u>not</u> acceptable. Aerating the soil to remove organic compounds is not a treatment method. It results only in removing the contamination from one media, soil, and depositing it into another media, the atmosphere.
- Insufficient information is provided to evaluate the headspace field screening technique for volatile organic compounds.
- 3. The samples collected to verify clean conditions should be analyzed under the CLP; that is, DQO level 4.

#### Inorganic Design Plan

1. Inorganic Design Plan, Section 3.2.4, Since organic compounds may be present in the areas contaminated with inorganics, ESD recommends air monitoring with an OVA or PID continuously.



2. Inorganic Design Plan, Section 3.2.4, The plan should provide detailed information concerning the sampling strategy which will be used to collect the composite soil samples.

If you have any questions, please call me at 404-546-3172.

cc: Bokey/Hall

**April 1992** 

# ENGINEERING DESIGN FORUM ASSISTANCE HOWE VALLEY SOILS SITE

Short Review of Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils

by

James P. Stumber

Contract No. 68-C9-0033

Work Assignment 2-R008-48

Hugh E. Masters
Project Officer

Michael Borst Task Leader Releases Control Branch

Joan Colson
Technical Project Monitor
Superfund Technology Demonstration Division
Office of Research and Development
U.S. Environmental Protection Agency
Cincinnati, OH 45268

...

#### 1.0 EXECUTIVE SUMMARY

This report provides a short review and assessment of a Bench-Scale Test Protocol: "Effect of Roto-Tilling on VOC Volatilization from Howe Valley Solis" prepared by the Dragun Corporation. This protocol is intended to simulate the VOC Volatilization occurring due to treatment by roto-tilling contaminated soil in the field.

We conclude that the test program as presented in the protocol will adequately simulate VOC volatilization from the contaminated Howe Valley Soils. The test program should be able to determine whether target levels in the roto-tilled soil are achievable. However, predictions of the time required for remediation will only be qualitative.

Although the test protocol is well-written, it lacks specificity. Some of the items that the protocol did not address are the:

- Target VOC concentrations to determine the endpoint of the study.
- List of target compounds that will be analyzed for soil concentrations.
- Calibration techniques of measurement instruments.
- Specific method numbers of the "standard" sampling and analytical procedures.
- Required recoveries, precision, and completeness.

# Other concerns are as follows:

- The target soil moisture coments presented in different parts of the protocol are inconsistent.
- How are soil moisture contents determined?
- Would 50 °F simulate the soil temperature better than 70 °F?

These and the other concerns that need to be addressed in the protocol are discussed below.

#### 2.0 INTRODUCTION

According to the bench-scale test protocol [1], soil aeration has been selected as the preferred soil treatment technology at the Howe Valley site. The protocol was developed by The Dragun Corporation for Dow Corning Corporation. The purpose of the test program, described by the protocol, is to assess the fate of volatile organic chemicals (VOCs) from surface soils aerated via roto-tilling at the Howe Valley site.

The solis contain 1,1,1 -trichloroethane (TCA), tetrachioroethene (PCE), 1,1 -dicholoroethane (DCA), and 1,2 -dichloroethene (DCE).

This report provides a brief review of the test protocol, assesses the protocol, and presents recommendations to improve it.

#### 3.0 REVIEW OF BENCH-SCALE TEST PROTOCOL

#### 3.1 General Evaluation of the Protocol

The test program, presented in the protocol, should adequately simulate the loss of volatiles from the soil by roto-tilling. The program should be able to provide an indication of whether the agration technology can achieve adequate VOC removals to clean the sits to the cleanup standards specified in the Record of Decision (ROD) (not available to the reviewer). However, the proposed program will only give qualitative information on the rate of decay of the volatile concentrations in the soil because of the following factors: The volatile loss caused by transport to soil below the treated area is not properly simulated; the mixing of the soil in the bench-scale experiment will only qualitatively simulate the roto-tilling process; and soil temperature in the field will probably differ from that in the bench-scale experiment. Hence, prediction of the required remediation time derived from the measurements proposed for the program should only be considered as a qualitative indicator.

#### 3.2 Comments on the Main Protocol

Aithough the protocol is well thought-out and written, it lacks specificity [2,3]. The protocol should be revised to address the following concerns:

- 1. Describe how the endpoint of the experiment is determined. What are the target VOC concentrations? Is tetrachioroethene (PCE) the main target compound?
- 72. The wording implies a total of four tests: two tests at approximately 5% soil moisture and two tests at approximately 40% soil moisture. Please confirm.

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- For purposes of review, 8W 846 Method numbers [4] for analysis of the soil should be cited.
- The writeup describing the deliverable is sparse. How will the test data be presented? Tables? **/7**. Graphs? is a succinct discussion of the findings and conclusions without discussions describing test objectives, test apparatus, test execution, quality assurance data adequate to permit an unbiased review?

# 3.2 Comments on Quality Assurance

The quality assurance section of the Protocol, Appendix A, also lacks specificity. The writeup appears to follow acceptable QA/QC procedures but the writeup is too general to verify this. The following comments should be addressed to insure that adequate QA/QC procedures are followed.

- Has the Dragun Corporation's QA/QC procedures been reviewed and approved by the EPA? If so, ١. Appendix A should verify this. If not pertinent procedures should be included as Appendices of the protocoi.
- The protocol states that the data indicators for precision and accuracy will be based upon Contract 2. Laboratory Program (GLP) criteria. This statement implies that there are deviations from the CLP oritoria, parhapa minor ones. What are the deviations from the procedures? The criteria for precision and accuracy should be tabulated in the protocol for each target compound analyzed and each instrument used.
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- The specific analytical procedures should be cited by method number in the protocol. 4.
- The instrument calibration procedures for temperature and relative humidity should be presented 5. in the protocol.

# 4.0 REFERENCES

- Dragun, J. 1992. Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Voistilization from Howe Valley Solls. The Dragun Corporation, Farmington Hills, MI.
- 2. U.S. Environmental Protection Agency, 1989. Guide for Conducting Treatability Studies under CERCLA. EPA/540/2-89/058 Office of Emergency and Remedial Response, Washington, D.C. and Office of Research and Development, Cincinnati, OH.
- 3. Guide for Conducting Treatability Studies Under CERCLA: Soil Vapor Extraction. Interim Guidance. EPA/840/2-91/019A. Risk Reduction Engineering Laboratory, Cincinnati, OH. September 1991.
- 4. Test Methods for Evaluating Solid Waste. 3rd Ed. SW-846. Office of Solid Waste and Emergency Response, Washington, DC. November 1986.

md:FORUM:RPT-0848

# FACSIMILE COVER-SHEET

Superfund Technology Demonstration Division Technical Support Branch Cincinnati, Ohio 45268



| THO!   |
|--|
| Date 4/9/92 Pages Transmitted 6  |
| TO: Nester Young   |
| LOCATION: Reg 4  |
| FAX NUMBER: 404 - 347 - 1695   |
| FROM:  |
| PHONE NUMBER: FT3 684-7624   |
| COMMENTS: Wented to get you review to your hafre 4/10/12 deadline  |
| Nester - Re: Review of Treatability Study of Flowe Valley St.  |
| We had our materials handling fertisation toain and  |
| contractor sevien the treatability study. I have   |
| not received the hard copy on of this time so I  |
| it' the realable. If there is a furthern please  |
| call me If you have any questions or need  |
| futher assistance - fless get back with us.  |
| hanks!   |
| Joan Matter  |
| Transmitted From: Risk Reduction Engineering Laboratory Superfund Technology Demonstration Division Phone FTS 684-7519, (513) 569-7519 |
| Phone FTS 684-7519, (513) 569-7519<br>FAX FTS 684-7676, (513) 569-7676   |

April 1992

# ENGINEERING DESIGN FORUM ASSISTANCE HOWE VALLEY SOILS SITE

Short Review of Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Solls

by

James P. Stumbar

Contract No. 68-C9-0033

Work Assignment 2-R008-48

Hugh E. Masters Project Officer

Michael Borat Task Leader Releases Control Branch

Joan Colson
Technical Project Monitor
Superfund Technology Demonstration Division
Office of Research and Development
U.S. Environmental Protection Agency
Cincinnati, OH 45268

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- 5. The instrument calibration procedures for temperature and relative humidity should be presented in the protocol.

#### 4.0 REFERENCES

- 1. Dragun, J. 1992. Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils. The Dragun Corporation, Farmington Hills, Mi.
- 2. U.S. Environmental Protection Agency, 1989. Guide for Conducting Treatsibility Studies under CERCLA. EPA/540/2-89/088 Office of Emergency and Remedial Response, Washington, D.C. and Office of Research and Development, Cincinnati, OH.
- 3. Guide for Conducting Treatability Studies Under CERCLA: Soil Vapor Extraction. Interim Guidence. EPA/540/2-91/019A. Risk Reduction Engineering Laboratory, Cincinnati, OH. September 1991.
- 4. Test Methods for Evaluating Solid Wasts. 3rd Ed. SW-846. Office of Solid Wasts and Emergency Response, Washington, DC. November 1956.

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# FACSIMILE COVER SHEET

Superfund Technology Demonstration Division Technical Support Branch Cincinnati, Ohio 45268



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| Date 4/9/92 Pages Transmitted 6   |
| TO: Mester Young LOCATION: Reg 4  |
| LOCATION:   |
| FAX NUMBER: 404-347-1695  |
| FROM: Matter  |
| PHONE NUMBER: FT3 684-7624  |
| COMMENTS: Wenter to get you review to your before 4/10/12 deathing  |
| Nester - Re: Review of Trestability Study of Home Valley St.  |
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| contractor review the trestability study. I lave  |
| not received the last copy on of this time so I   |
| an sending you a fax of their fax. I hope   |
| it the realable. If there is a footen please  |
| call me If you have any questions or need   |
| - futher wittener - fless get back with us.   |
| Theoke !  |
| your Matty  |
| Transmitted From: Risk Reduction Engineering Laboratory Superfund Technology Demonstration Division Phone FTS 684-7519, (513) 569-7519 FAX FTS 684-7676, (513) 569-7676 |



April 6, 1992

Mr. Nestor Young Remedial Project Manager U.S. Environmental Protection Agency, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

RE: Draft Inorganic Remedial Design Review Comments
Work Assignment No. 17-4XN8
Howe Valley Landfill Site
HOWE Valley, Hardin County, Kentucky
Contract No. 68-W9-0057
Document Control No. 4400-17-ABRZ

Dear Mr. Young:

Roy F. Weston, Inc., (WESTON) has prepared the attached comments on the Draft Inorganic Remedial Design as specified in the Scope of Work for its Remedial Design/Remedial Action (RD/RA) oversight activities at the Howe Valley Landfill Site. WESTON is providing RD/RA oversight and project assistance to the U.S. Environmental Protection Agency (EPA), Region IV, under EPA Contract No. 68-W9-0057. The attached comments are in response to the "Draft Inorganic Design Plan", prepared for Dow Corning Corporation by Hatcher-Sayre, Inc., February 28, 1992.

The Inorganic Remdial Design submitted by Hatcher-Sayre includes prior data aquisition and analytical results, Health and Safety Plan, and specifications to remediate the inorganic contaminated soils. WESTON's review focused on consistency with respect to the objectives of the EPA Record of Decision (ROD) and the ARARS contained within the ROD. OSWER Directive 9355.5-01 "Interim Final Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, February 1990" was also utilized as a guidance document in the review process.



If you have any questions concerning these comments, please call Randy Ferguson or me at (404) 448-0644.

Sincerely,

Roy F. Weston, Inc.

Ralph P. McKeen, P.E.

Work Assignment Manager

Rapel P. M. Ken

Enclosure cc:

Charles Swan, EPA, Region IV L. Lewis, EPA, Region IV R.R. Ferguson, WESTON

Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: April 1992 Page: 1 of 5

#### **ATTACHMENT**

Contract No. 68-W9-0057
Work Assignment No. 17-4XN8
Document Control No. 4400-17-ABRZ

#### INORGANIC REMEDIAL DESIGN REVIEW

The proposed remediation plan is not a complicated technical remedy. Excavation and offsite disposal has been performed frequently on Superfund sites and is well documented. The overall conceptual approach described in this plan generally appears adequate to fulfill the objectives described in the ROD. WESTON has made some specific comments and suggestions which are provided herein.

#### FINAL DESIGN PLAN

1. Section 2.3.2.1 "Organic Analysis"

Paragraph 3, page 25 indicates that 1,2-DCE occurred above the soil action level (SAL) at Location 11H where the 3-foot samples showed 1,2-DCE at 15 mg/kg and 20 mg/kg (duplicate location). Table 3 on page 24 indicates that these results occurred at location 11E bottom (3 feet), not at 11H 3 feet. Correct the discrepancy between the data.

2. Section 2.3.2.2 "Inorganic Analysis"

Paragraph 4 of this section indicates that on February 7, an additional six surface and subsurface samples were taken at Location 7D. Where are the results of these samples?

√ 4. The subsequent sections of this plan (i.e., analytical report, health and safety plan, technical specifications) need to be appropriately labeled as Appendix A, B, and C. These sections are referenced in the *Inorganic Design Plan* as appendices but are not labeled accordingly. Also, the *Table of Contents* should include the list of appendices in the plan.

Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: April 1992

Page: 2 of 5

#### **HEALTH AND SAFETY PLAN**

- 1. Given that the work is taking place in undeveloped areas, the HASP should address poisonous snakes, plants, insects, reptiles, and animals.
- 2. Indicate a projected start date and end date.
- 3. Identify the roles and responsibilities of Hatcher-Sayre, Inc. and their subcontractors during site operations.
- 4. Identify the qualifications of the Site Health and Safety Officer.
- 5. Section X "Ambient Air Monitoring"

Specific action levels for personnel protection should be identified for organic levels on the PID and /or OVA meter. Also, associated changes in levels of protection if these action levels were reached during excavation should be provided.

Since it is inorganic contaminants which are of major concern, WESTON also recommends that visible dust be used as an action level for personnel protection. Direct readings for chromium cannot be conducted but if visible dust is generated and engineering controls are not effective, work will be stopped until such time that dust levels are controlled.

- 6. Personnel Protection Requirements
  - List the (PPE) required for Level C.
- 7. Include a Direct Reading Air Monitoring Instruments Calibration Record.
- 8. Include a section for equipment decontamination.
- 9. Include Site Personnel and Certification Status (H&S Training) for:
  - Earthwork contractor's personnel
  - Hatcher-Sayre, Inc. personnel
  - Transporter's personnel

Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: April 1992

Date: April 1992 Page: 3 of 5

10. Every person on-site should read the HASP and document his review. The documentation should occur on a HASP approval/signoff sheet attached to the plan.

#### 11. Personnel Decontamination Procedures

Include decontamination procedures for Level C, in case of upgrade.

#### TECHNICAL SPECIFICATIONS

#### 1. Section 1.3.1 "Material Removal"

Clarification of the second sentence is required. The sentence says "Areas which require large amounts of material to be removed are noted on the drawings." Are there other small areas which are not noted on the drawings, if so, where are they? If not, rewrite the sentence to indicate "the areas that require material removal are noted on the drawings."

#### 2. Sections 1.3.4 and 1.4.4 "Stockpiling"

Has direct loading been evaluated to directly load the excavated material into the transportation vehicles. This would eliminate the risk of spreading contamination to the stockpiling area. If a stockpiling area is preferred by the contractor, 30 mil HDPE or equivalent is recommended to line the bottom of the storage area. After placement of the 30 mil liner, a 12-inch layer of sand will be placed. Upon the completion of the work, the liner and sand must be removed and disposed of as hazardous material. After removal of the temporary holding cell, confirmation samples from the surface area must be taken in order to declare the area clean.

#### 3. Section 2.1 "Scope"

The last sentence reads that revegetation procedures will begin only after the site has been deemed "clean" of both organic and inorganic contaminants. It is important to facilitate revegetation in excavated areas as soon as they are backfilled. This will eliminate the problem of erosion and site runoff. For these reasons, as soon as the inorganic material is excavated and the area backfilled, the contractor should be required to revegetate immediately.

Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: April 1992

Date: April 199 Page: 4 of 5

- 4. It would be beneficial to create a subsection discussing the development and upgrading of access roads for construction purposes.
- 5. A section should be developed to give guidance to the contractor for handling stormwater that enters the excavation. The water that enters the excavation should be temporarily contained until the confirmation sample results are returned. If they return clean, then the material should be handled as stormwater; if not, the water should be sampled and disposed of properly.

#### GENERAL COMMENTS

The following general comments pertain to the review specifically relative to EPA guidance document OSWER Driective 9355.5-01 "Interim Final Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, February, 1990".

The following sections are missing as specified in the above referenced guidance document.

- 1) Field Sampling Plan (FSP). This document defines the sampling and data gathering methods to be used in the construction project. The "Inorganic Design Plan" states only that composite samples will be obtained from each wall following excavation. This should be included in a FSP to describe this activity further.
- 2) Construction Quality Assurance Plan (CQAP). This plan should address the site specific components of the quality assurance to ensure that the completed project meets the desgin criteria, plans, and specifications.
- 3) Contingency Plan. This plan is also recommended to protect the local affected population in the event of an accident or emergency. This would include addressing the offsite transportation through populated areas.

It is WESTON's understanding that this Remedial Design submission was also to serve as the Remedial Action Work Plan. The following specific elements should be included to ensure a sound approach to the remedial action.

• Tentative formulation of the Remedial Action Team, including key personnel, description of duties, and lines of authority in the management of construction activities.

Comments/Responses Howe Valley Landfill Site Howe Valley, Hardin County, KY Revision: 0 Date: April 1992

Date: April 199 Page: 5 of 5

- Organizational chart, developing key personnel.
- Method to implement the Construction Quality Assurance Plan, including criteria and composition of the CQP team.
- Schedule for the Remedial Action (project start date, end date). Also include key phases of work.
- Strategy for implementing the Contingency Plan.
- Procedure for data collection during the Remedial Action to confirm that the area is clean (i.e., FSP).
- Requirements for project closeout (final inspections and closure report outline).
- Include a phase operations plan which details the procedures and contractors used to perform each phase of work. Include a description of the contractors' experience and qualifications. Should also identify the transporter and disposal location and associated hazardous waste permits.

# **TELECOPY TRANSMITTAL FORM**

# ROY F. WESTON, INC.

6021 Live Oak Parkway
Norcross, Georgia 30093
Confirmation Telephone (404) 448–0644
Telecopy Telephone (404) 368–1168

| TO:              | NESTON YOUNG                        |
|------------------|-------------------------------------|
| TELECOPY NUMBER: | 347-1695                            |
| FROM:            | RALPH MEKEN                         |
| DATE:            | 6 April 1992                        |
| NUMBER OF PAGES: | 8                                   |
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|                  | PLEASE CALL                         |
|                  | AT (404) 448-0644                   |



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### Dear Mr. Young:

Roy F. Weston, Inc., (WESTON) has prepared the attached comments on the Draft Inorganic Remedial Design as specified in the Scope of Work for its Remedial Design/Remedial Action (RD/RA) oversight activities at the Howe Valley Landfill Site. WESTON is providing RD/RA oversight and project assistance to the U.S. Environmental Protection Agency (EPA), Region IV, under EPA Contract No. 68-W9-0057. The attached comments are in response to the "Draft Inorganic Design Plan", prepared for Dow Corning Corporation by Hatcher-Sayre, Inc., February 28, 1992.

The Inorganic Remdial Design submitted by Hatcher-Sayre includes prior data aquisition and analytical results, Health and Safety Plan, and specifications to remediate the inorganic contaminated soils. WESTON's review focused on consistency with respect to the objectives of the EPA Record of Decision (ROD) and the ARARS contained within the ROD. OSWER Directive 9355.5-01 "Interim Final Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, February 1990" was also utilized as a guidance document in the review process.



SENT BY: ROY F. WESTON INC.

Mr. Nestor Young April 6, 1992 Page 2

If you have any questions concerning these comments, please call Randy Ferguson or me at (404) 448-0644.

Sincerely,

Roy F. Weston, Inc.

Ralph P. McKeen, P.E.

Work Assignment Manager

all P. M. Ken

Enclosure cc:

Charles Swan, EPA, Region IV L. Lewis, EPA, Region IV R.R. Ferguson, WESTON

Comments/Responses
Howe Valley Landfill Site
Howe Valley, Hardin County, KY
Revision: 0
Date: April 1982
Page: 1 of 5

#### **ATTACHMENT**

Contract No. 68-W9-0057
Work Assignment No. 17-4XN8
Document Control No. 4400-17-ABRZ

#### **INORGANIC REMEDIAL DESIGN REVIEW**

The proposed remediation plan is not a complicated technical remedy. Excavation and offsite disposal has been performed frequently on Superfund sites and is well documented. The overall conceptual approach described in this plan generally appears adequate to fulfill the objectives described in the ROD. WESTON has made some specific comments and suggestions which are provided herein.

#### FINAL DESIGN PLAN

# 1. Section 2.3.2.1 "Organic Analysis"

Paragraph 3, page 25 indicates that 1,2-DCE occurred above the soil action level (SAL) at Location 11H where the 3-foot samples showed 1,2-DCE at 15 mg/kg and 20 mg/kg (duplicate location). Table 3 on page 24 indicates that these results occurred at location 11E bottom (3 feet), not at 11H 3 feet. Correct the discrepancy between the data.

# 2. Section 2.3.2.2 "Inorganic Analysis"

Paragraph 4 of this section indicates that on February 7, an additional six surface and subsurface samples were taken at Location 7D. Where are the results of these samples?

4. The subsequent sections of this plan (i.e., analytical report, health and safety plan, technical specifications) need to be appropriately labeled as Appendix A, B, and C. These sections are referenced in the *Inorganic Design Plan* as appendices but are not labeled accordingly. Also, the *Table of Contents* should include the list of appendices in the plan.

Comments/Responses
Howe Valley Landfill Site
Howe Valley, Hardin County, KY
Revision: 0
Date: April 1992
Page: 2 of 5

NORCROSS→

#### HEALTH AND SAFETY PLAN

- 1. Given that the work is taking place in undeveloped areas, the HASP should address poisonous snakes, plants, insects, reptiles, and animals.
- 2. Indicate a projected start date and end date.
- 3. Identify the roles and responsibilities of Hatcher-Sayre, Inc. and their subcontractors during site operations.
- 4. Identify the qualifications of the Site Health and Safety Officer.
- 5. Section X "Ambient Air Monitoring"

Specific action levels for personnel protection should be identified for organic levels on the PID and /or OVA meter. Also, associated changes in levels of protection if these action levels were reached during excavation should be provided.

Since it is inorganic contaminants which are of major concern, WESTON also recommends that visible dust be used as an action level for personnel protection. Direct readings for chromium cannot be conducted but if visible dust is generated and engineering controls are not effective, work will be stopped until such time that dust levels are controlled.

- 6. Personnel Protection Requirements
  - List the (PPE) required for Level C.
- 7. Include a Direct Reading Air Monitoring Instruments Calibration Record.
- 8. Include a section for equipment decontamination.
- 9. Include Site Personnel and Certification Status (H&S Training) for:
  - Earthwork contractor's personnel
  - Hatcher-Sayre, Inc. personnel
  - Transporter's personnel

Comments/Responses
Howe Valley Landfill Site
Howe Valley, Hardin County, KY.
Revision: 0
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Page: 3 of 5

- 10. Every person on-site should read the HASP and document his review. The documentation should occur on a HASP approval/signoff sheet attached to the plan.
- 11. Personnel Decontamination Procedures

Include decontamination procedures for Level C, in case of upgrade.

#### **TECHNICAL SPECIFICATIONS**

#### 1. Section 1.3.1 "Material Removal"

Clarification of the second sentence is required. The sentence says "Areas which require large amounts of material to be removed are noted on the drawings." Are there other small areas which are not noted on the drawings, if so, where are they? If not, rewrite the sentence to indicate "the areas that require material removal are noted on the drawings."

### 2. Sections 1.3.4 and 1.4.4 "Stockpiling"

Has direct loading been evaluated to directly load the excavated material into the transportation vehicles. This would eliminate the risk of spreading contamination to the stockpiling area. If a stockpiling area is preferred by the contractor, 30 mil HDPE or equivalent is recommended to line the bottom of the storage area. After placement of the 30 mil liner, a 12-inch layer of sand will be placed. Upon the completion of the work, the liner and sand must be removed and disposed of as hazardous material. After removal of the temporary holding cell, confirmation samples from the surface area must be taken in order to declare the area clean.

### 3. Section 2.1 "Scope"

The last sentence reads that revegetation procedures will begin only after the site has been deemed "clean" of both organic and inorganic contaminants. It is important to facilitate revegetation in excavated areas as soon as they are backfilled. This will eliminate the problem of erosion and site runoff. For these reasons, as soon as the inorganic material is excavated and the area backfilled, the contractor should be required to revegetate immediately.

Comments/Responses
Howe Valley Landfill Site
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- 4. It would be beneficial to create a subsection discussing the development and upgrading of access roads for construction purposes.
- 5. A section should be developed to give guidance to the contractor for handling stormwater that enters the excavation. The water that enters the excavation should be temporarily contained until the confirmation sample results are returned. If they return clean, then the material should be handled as stormwater; if not, the water should be sampled and disposed of properly.

#### **GENERAL COMMENTS**

The following general comments pertain to the review specifically relative to EPA guidance document OSWER Driective 9355.5-01 "Interim Final Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, February, 1990".

The following sections are missing as specified in the above referenced guidance document.

- 1) Field Sampling Plan (FSP). This document defines the sampling and data gathering methods to be used in the construction project. The "Inorganic Design Plan" states only that composite samples will be obtained from each wall following excavation. This should be included in a FSP to describe this activity further.
- 2) Construction Quality Assurance Plan (CQAP). This plan should address the site specific components of the quality assurance to ensure that the completed project meets the desgin criteria, plans, and specifications.
- 3) Contingency Plan. This plan is also recommended to protect the local affected population in the event of an accident or emergency. This would include addressing the offsite transportation through populated areas.

It is WESTON's understanding that this Remedial Design submission was also to serve as the Remedial Action Work Plan. The following specific elements should be included to ensure a sound approach to the remedial action.

 Tentative formulation of the Remedial Action Team, including key personnel, description of duties, and lines of authority in the management of construction activities.

Comments/Responses
Howe Valley Landfill Site
Howe Valley, Hardin County, KY
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- Organizational chart, developing key personnel.
- Method to implement the Construction Quality Assurance Plan, including criteria and composition of the CQP team.
- Schedule for the Remedial Action (project start date, end date). Also include key phases of work.
- Strategy for implementing the Contingency Plan.
- Procedure for data collection during the Remedial Action to confirm that the area is clean (i.e., FSP).
- · Requirements for project closeout (final inspections and closure report outline).
- Include a phase operations plan which details the procedures and contractors used to perform each phase of work. Include a description of the contractors' experience and qualifications. Should also identify the transporter and disposal location and associated hazardous waste permits.



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

April 3, 1991

Mr. Carl Millanti, Manager
Uncontrolled Sites Branch
Kentucky Natural Resources and
Environmental Protection Cabinet
Department for Environmental Protection
Frankfort Office Park
18 Reilly Road
Frankfort, KY 40601

RE: Howe Valley Landfill NPL Site, Hardin County, Kentucky

Dear Mr. Millanti:

Enclosed is the *Draft Preliminary Organic Design Plan* for the Howe Valley site. Please review this document to determine if it is technically acceptable and meets your Department's approval. Return any comments or suggestions by April 17, 1992.

If you have any questions, feel free to call at (404) 347-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.

pc: Pat Haight, KNREPC



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

April 3, 1992

Mr. Ralph P. McKeen, P.E. Work Assignment Manager Roy F. Weston, Inc. 6021 Live Oak Parkway Norcross, Georgia 30093

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Mr. McKeen:

Enclosed for your review is the *Draft Preliminary Organic Design Plan* for the Howe Valley site. Please review this document to determine if it is technically acceptable and meets EPA guidance criteria. Return any comments or suggestions by April 17, 1992.

If you have any questions, please feel free to call me.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

April 3, 1992

Mr. Kenneth Skahn, P.E.
U.S. EPA OERR
Design and Construction
Management Branch
401 M Street, S.W. (OS-220W)
Washington D.C. 20460

RE: Howe Valley Landfill NPL Site.

Dear Mr. Skahn:

Attached is the Draft Preliminary Organic Design Plan for the Howe Valley site. Please review this document and provide any comments by April 17.

If you have any questions, feel free to call at FTS 257-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

April 3, 1992

Mr. William R. Bokey, Chief Hazardous Waste Section Environmental Compliance Branch U.S. EPA Environmental Services Division 960 College Station Road Athens, GA 30613-0801

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Mr. Bokey:

Enclosed for your Section's review is the *Draft Inorganic Design Plan*, and the *Draft Preliminary Organic Design Plan* for the Howe Valley site. Please review these documents to determine if they are technically acceptable and meet EPA guidance criteria.

Return any comments or suggestions by April 17, 1992. Your Department's continued assistance on this project is very much appreciated.

If there are any questions, please feel free to call me at FTS 257-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.



#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

April 3, 1991

Mr. Carl Millanti, Manager
Uncontrolled Sites Branch
Kentucky Natural Resources and
Environmental Protection Cabinet
Department for Environmental Protection
Frankfort Office Park
18 Reilly Road
Frankfort, KY 40601

RE: Howe Valley Landfill NPL Site, Hardin County, Kentucky

Dear Mr. Millanti:

Enclosed is the *Draft Preliminary Organic Design Plan* for the Howe Valley site. Please review this document to determine if it is technically acceptable and meets your Department's approval. Return any comments or suggestions by April 17, 1992.

If you have any questions, feel free to call at (404) 347-7791.

Sincerely,

Nestor Young/

Remedial Project Manager Kentucky/Tennessee Section North Superfund Remedial Branch

Enclosure.

pc: Pat Haight, KNREPC



6021 Live Oak Parkway Norcross, Georgia 30093 (404) 448-0644

March 27, 1992

ATLANTA, GA

Mr. Nestor Young Remedial Project Manager U.S. Environmental Protection Agency, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

RE: Roto-Tilling Bench-Scale Test Protocol Review Comments

Work Assignment No. 17-4XN8

Howe Valley Landfill Site

Howe Valley, Hardin County, Kentucky

Contract No. 68-W9-0057

Document Control No. 4400-17-ABRE

Dear Mr. Young:

Roy F. Weston, Inc., (WESTON) has prepared the attached comments on the Roto-Tilling Treatability Study on VOC Soils as specified in the Scope of Work for its Remedial Design/Remedial Action (RD/RA) oversight activities at the Howe Valley Landfill Site. WESTON is providing RD/RA oversight and project assistance to the U.S. Environmental Protection Agency (EPA), Region IV, under EPA Contract No. 68-W9-0057. The attached comments are in response to the "Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils", prepared for Dow Corning Corporation by the Dragun Corporation (Dragun), February 20, 1992.

The Bench Scale Test Protocol submitted by Dragun includes a laboratory study to determine the effectiveness of roto-tilling to reduce the VOC concentrations in soils. WESTON's review was based on CERCLA guidance documents for treatability studies.

If you have any questions concerning these comments, please call Randy Ferguson or me at (404) 448-0644.

Sincerely,

ROY F. WESTON, INC.

Ralph P. McKeen, P.E. Work Assignment Manager

/rpm Attachment See page 2 for distribution.



Mr. Nestor Young March 27, 1992 Page 2

### Distribution

cc: Charles Swan, EPA, Region IV
L. Lewis, EPA, Region IV
R.R. Ferguson, WESTON
J.R. Miller, WESTON

Attachment Howe Valley Landfill Site Howe Valley, Hardin County, KY Date: March 27, 1992 Page: 1 of 5

#### **ATTACHMENT**

# Contract No. 68-W9-0057 Work Assignment No. 17-4XN8 Document Control No. 4400-17-ABRE

### TREATABILITY DESIGN REVIEW

In general, the protocol lacks detail which is specified in EPA/540/2-89/058 "Guide for Conducting Treatability Studies Under CERCLA," December 1989. It does not provide an unacquainted reader with any background information. Also, WESTON is not convinced that this study is representative of roto-tilling. The following specific comments are provided herein.

#### **EXECUTIVE SUMMARY**

### 1. Page 2, Paragraph 2, First Sentence

This sentence states that "Soils Containing VOCs are mechanically mixed..." It is not clear as to the actual procedure used for this mixing.

#### **GENERAL DESCRIPTION**

It would be beneficial at this point to provide a background of the site including site conditions and history.

### √ 2. <u>Page 2, Paragraph 3</u>

Should provide the reader information to describe how this protocol simulates roto-tilling in the field.

### / 3. Page 2, Paragraph 4, First Sentence

Need to clarify what "relatively" high concentrations of the VOCs means. Also, need to state why these specific compounds were selected for the study.

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Attachment Howe Valley Landfill Site Howe Valley, Hardin County, KY Date: March 27, 1992

Page: 2 of 5

# √ 4. Page 2, Paragraph 4, First Sentence

Are the 8.5-liter glass containers "open" or "closed" vessels?

### √ 5. Page 2, Paragraph 4, Second Sentence

Why are the soils being maintained at five percent or 40% moisture contents by weight?

### 6. Page 2, Paragraph 4, Last Sentence

The study plans to use two replications for each experimental unit. Triplicates are more suitable for statistical evaluation.

# √7. Page 2, Paragraph 6

Please explain the VOC loss which may occur during the handling procedures discussed in this paragraph?

#### **DEFINITIONS**

# 8. Page 2, Paragraph 7

Where is this study being performed? Is it being performed in the Dragun Laboratory?

### X 9. Page 3, Paragraph 2

How much soil is contained in this "soil unit"?

#### SPECIAL MATERIALS

# √ 10. Page 3, Paragraph 2

What is the spiking protocol? This is very difficult to do accurately.

Is the spike a "total" VOC concentration? And why was a 100 ppm spike chosen?

### → 11. Page 3. Paragraph 5

What do the dimensions 12"x 8"x 5.5" refer to? Is this length x width x height?

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Attachment Howe Valley Landfill Site Howe Valley, Hardin County, KY Date: March 27, 1992 Page: 3 of 5

#### **ASSUMPTIONS**

### √ 12. Page 4, Paragraph 1

An experiment could be run to estimate microbial degradation.

### **PROCEDURE**

✓ In general, need to describe how the soil will be collected and prepared. Also, should specify the quantity of soil obtained from the field.

Does mixing occur only once at the beginning or more often? This is not clearly stated.

A tabular summary of the experimental program would be helpful to aid the readers' understanding.

### 13. Page 4, Paragraph 4, First Sentence

Is this volume of soil based on dry weight or does the experiment control density? This is not mentioned.

# √ 14. Page 4, Paragraph 4, Second Sentence

How is the tap water added and mixed?

### 15. Page 4, Paragraph 6

How will the soil be placed/packed into the glass container?

### 16. Page 4, Paragraph 7

What about controls for chambers with relatively low (30%) RH, which is mentioned on Page 2, Paragraph 5?

### / 17. Page 5, Paragraph 1

How will the VOC concentrations be measured with the PID?

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Attachment Howe Valley Landfill Site Howe Valley, Hardin County, KY Date: March 27, 1992 Page: 4 of 5

# 18. Page 5, Paragraph 2, Second Sentence

The 10% and 50% moisture contents are very high and they are inconsistent with the values stated on Page 2, Paragraph 4.

19. Page 5, Paragraph 3, First Sentence

What is the termination criteria?

/ 20. Page 5, Paragraph 3, Second Sentence

What is the basis for stating that sufficient volatilization will have occurred in one month?

× 21. Page 5, Paragraph 4, First Sentence

It is not possible to obtain "no headspace" in the glass container.

1 22. Page 5, Paragraph 4, Second Sentence

Need to provide the sampling procedures.

23. Page 5, Paragraph 5, First Sentence

Should provide the name of the independent analytical laboratory.

√ 24. Page 5, Paragraph 5, Second Sentence

Need to state the analytical method. CLP?

**REPORTS** 

Should present a milestone chart.

25. Page 5, Paragraph 7

How will the data be interpreted?

Attachment
Howe Valley Landfill Site
Howe Valley, Hardin County, KY
Date: March 27, 1992
Page: 5 of 5

### **REFERENCES**

All referenced appendices are very generic and provide no site-specific/project specific information.

### APPENDIX A

There is no mention of the specific analytical methods to be performed.

### APPENDIX B

This QA plan is a general laboratory plan which does not integrate specific information from this site.

### APPENDIX C

WESTON is assuming that this is not the formal site health and safety plan but only a format for preparing the actual plan for field sampling activities. The format appears to comply with the necessary requirements but a site specific plan should be presented to the EPA for review.

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REMEDIAL BRANCH



#### COMMONWEALTH OF KENTUCKY

# NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FRANKFORT OFFICE PARK 18 REILLY ROAD FRANKFORT, KENTUCKY 40601

March 26, 1992

Nestor Young U.S. Environmental Protection Agency 345 Courtland Street, N.E. Atlanta, GA 30365

RE: Howe Valley Landfill NPL Site

Hardin County, KY

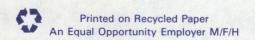
Bench-Scale Test Protocol

Dear Mr. Young:

The "Test Protocol: Effect of Roto-tilling...Howe Valley Soils" has been reviewed and we have the following comments.

- 1. It is not clear how many unique test samples will be taken for bench scale testing. The number of samples and sample locations should be sufficient and representative of the soils in the contaminated area to the extent practical, and should be specified.
  - Test soil sample set-up: The thickness of the soil layer (or the surface area exposed to air/unit volume of soil) in the test container should be specified, and it should be relevant to the conditions that will exist at the site if the method is adopted as a remedial measure. Also, in on-site roto-tilling a constant surface area per unit volume will be exposed since quantity of samples taken out will be negligible compared to the total soil quantity.
- √ 3. It has been proposed to maintain two levels of moisture levels in soil, namely 3-5 and 25-30% at start of test and bringing these to 10 and 50% every day. It should be noted that this will not necessarily lead to an "average" moisture content of 5 and 40%, since water loss and hence moisture content will not vary linearly. Hence, test reporting should give the ranges rather than "average" values.

The moisture content should be specified clearly, i.e. dry soil weight basis.



Mr. Young Page two March 26, 1992

- √4. Use of tap water per soil moisture content adjustment: Tap water usage should be justified.
- 5. Spiking of low VOC soil: Spiking with PCE alone, as proposed, may be satisfactory. However, the test seems to assume that varying concentrations of the different VOCs of interest in the soil may not greatly influence the test results (and site roto-tilling).

Also, while soil action level (SAL) for PCE is 7.5 mg/kg, spiking the soil up to 100 ppm has been indicated. Again, this may be satisfactory, as long as the test is continued till at least the SAL is reached, rather than till (as proposed) the volatilization rates are "sufficiently" quantified. The volatilization rate will be far lower at lower concentrations of organics in soil and hence required time frames will be longer; at worst, SALs may not be reached in a "reasonable" period.

76. Termination criteria: In addition to the above, the criteria for determination of success of the method/test should be set. In this context an exponential decay in soil concentration(s) may be a reasonable model to use to specify appropriate criteria.

If there are any questions, please feel free to call me at (502) 564-6716.

Sincerely,

Ruk Hogan

Rick Hogan, Supervisor Remedial Action Section Division of Waste Management

RH/MR/kb

c: File

REMEDIAL BRANC



### COMMONWEALTH OF KENTUCKY

# NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FRANKFORT OFFICE PARK 18 REILLY ROAD FRANKFORT, KENTUCKY 40601

March 26, 1992

Nestor Young, RPM U.S. Environmental Protection Agency 345 Courtland Street, N.E. Atlanta, GA 30365

RE: Howe Valley Landfill NPL Site Hardin County, KY

Draft Inorganic Design Plan

Dear Mr. Young:

After a review of the draft Inorganic Design Plan for Howe Valley Landfill Site, we find that it is generally in order. In our opinion the excavated soil should be analyzed for the target organic contaminants if suspected to be present; if the levels are above SAL for these organics, appropriate action should be taken. The inorganic Design Plan should specify the action proposed in case of such a contingency. Also, since a SAL for cyanide has been set, the soil samples should be analyzed for cyanide also.

Sincerely,

Rick Hogan, Supervisor Remedial Action Section

Division of Waste Management

RH/MR/kb

c: File

U. S. ENVIRONMENTAL PROTECTION AGENCY REGION IV, ATHENS, GEORGIA

#### **MEMORANDUM**

### MAR 24 1992

Howe Valley Landfill Site, Howe Valley, Kentucky, SUBJECT:

Treatability Study; ESD Project No. 92E-299

FROM:

Dan Thoman, Regional Expert Hazardous Waste Section Environmental Compliance Branch Environmental Services Division

TO:

Nestor Young KY/TN Section

North Superfund Remedial Branch

Waste Management Division

THRU:

William R. Bokey, Chief Hazardous Waste Section

Environmental Compliance Branch Environmental Services Division

within R. Bah I have reviewed the above mentioned document and have three comments:

- ESD recommends that a custody seal be placed on each sample container and within the strapping tape used to secure the shipping container.
- The sample containers should have teflon-lined septum 12. screw caps.
- V3. How will the VOC concentrations of the "soil air" be measured using a photoionization detector.

If you have any questions, please call me at FTS 250-3172.

Bokey/Hall cc:



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

MAR 2 3 1992

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

### **MEMORANDUM**

SUBJECT: Review of the Treatability Study Work Plan for the Howe

Valley Landfill Site, Kentucky

FROM: Ken Skahn, RD/RA Coordinator Ken Skahn

OERR/HSCD/DCMB (OS-220W)

TO: Nestor Young, RPM

Region 4/NSRB/Kentucky-Tennessee Section

I have reviewed the subject work plan as requested. This is to confirm the comments I provided to you by phone on 3/16/92. My comments are as follows:

- 1. What concentrations of contaminants exist at the site? I am not sure whether the contractor is proposing to treat maximum, average, or low levels of contaminated soils. As discussed, the treatability study should probably include both high and low concentrations of contaminants to truly be confident that the full range of possible concentrations is amenable to treatment.
- 2. The work plan twice mentions the addition of tap water to the soil samples to adjust the moisture content. Why not use distilled water? I would think that the chlorine or other additives to tap water may influence the results.
- 3. The proposed schedule on Page 6 of the work plan is inadequate. A complete schedule should include proposed dates for procuring the samples, running the tests, completing the analysis, and submitting the final report.
- 4. We also discussed the lack of detail in the work plan regarding procedures for conducting the treatability study.

If you have any questions, or if I can be of further assistance, please call me at FTS 678-8355.

(703) 308-8389



# FACSIMILE COVER SHEET

# U.S. Environmental Protection Agency

Office of Emergency and Remedial Response Hazardous Site Control Division (OS-220W) Washington, D.C. 20460

| Date: 3/23/92                  | Pages Transmitted: 2 (including cover)   |
|--------------------------------|--|
| TO: Nestor Young               |  |
| Region/Lab/Firm: Region        | 4  |
| Fax Number: <u>F15.257-169</u> | 5 Phone Number: <u>F73 257-1791</u>  |
|                                |  |
| Phone Number: FT3 678 -8       | 355  |
| Comments:                      |  |
|                                |  |
|                                |  |
| Ha<br>(Cı                      | fice of Emergency and Remedial Response izardous Site Control Division rystal Station, 6th floor) none: FTS 398-8313, (703) 308-8313 |

FTS 398-8389,



Recd 3/23/92 Ny

March 20, 1992

Edward C. Ovsenik, Esq. Dow Corning Corporation 2200 Salzburg Rd. CO1242 Midland, MI. 48686-0994

Re: Draft Preliminary
Organic Design Plan
Howe Valley Landfill
Hardin County, Kentucky

Job No. 0064-001

Dear Mr. Ovsenik:

Enclosed is your copy of the draft Preliminary Organic Design Plan. As we did with Inorganics Plan, we are sending six copies of the Preliminary plan directly to Mr. Nestor Young, U.S. EPA. Please note that this document is supposed to be only 30% complete and, therefore, several areas within the plan will need to be more detailed.

Please call if you have any questions.

Sincerely,

HATCHER-SAYRE, INC.

James D. Knauss, Ph.D.

Project Manager

enclosure

cc: Nestor Young

James Mersereau-Kempf

Carroll Coogle

JDK/bh

Rec'd 3/12/92

# **The Dragun Corporation**

30445 Northwestern Hwy. • Suite 260 • Farmington Hills, MI 48334 • 313-932-0228 • FAX 313-932-0618

### LETTER OF TRANSMITTAL

| TO:        |   | DA                            | re:   |                                       |                               |
|------------|---|-------------------------------|---|---------------------------------------|-------------------------------|
|            |   | su                            | BJECT:  |                                       |                               |
|            |   |                               |   |                                       |                               |
| We are se  | nding you:  |                               |   |                                       |                               |
| <b>⋈</b> A | ttached or  | ( ) Under                     | separate c  | over via _                            | -                             |
| the follo  | wing items:   |                               |   |                                       |                               |
| ()         | Draft report<br>Plans<br>Shop drawings                    | Final<br>() Print<br>() Chang | l report<br>ts<br>ge order                        | ( ) Figure<br>( ) Specif<br>( ) Other | e<br>fications                |
| No. of Co  | pies<br>Bench-Sc  | Descrip<br>ale Jes            | otion<br>t Prote                                  | ircol                                 |                               |
| These are  | transmitted as  | s indicated                   | d below:  |                                       |                               |
|            | For information For review & co For approval As requested | ( )                           | Resubmit _ Return _ Returned a Submit _ distribut | fter loan to                          | for review<br>prints<br>to us |
| Remarks:   |   |                               |   |                                       |                               |
|            |   |                               |   |                                       |                               |
|            |   |                               |   |                                       |                               |
|            |   |                               |   |                                       |                               |
| If enclos  | ures are not as   | s noted, k                    | indly notif                                       | y us at one                           | e.                            |
|            |   | By:                           | Cfriste   | ne Chin                               | ke                            |

Recol 3/19/92

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
ENVIRONMENTAL SERVICES DIVISION
960 COLLEGE STATION RD.
ATHENS, GA 30613

### MEMORANDUM

DATE: March 17, 1992

SUBJECT: Evaluation of Split Sample and QC Data from

Howe Valley Landfill, Hardin County, KY

FROM: Gary Bennett, Chemist Sury Donnetto

Laboratory Evaluation and Quality Assurance Section

TO: Nestor Young, RPM

North Superfund Remedial Branch

Waste Management Division

THRU: Wade Knight, Chief WC

Laboratory Evaluation and Quality Assurance Section

We have received and evaluated final results and limited QC data for one soil and two water split samples collected at the subject site from November 25-26, 1991. The samples were split between the PRP's laboratory, Wadsworth Alert, and the Region IV ESD Laboratory.

The split samples were analyzed by the PRP's laboratory for selected analytes which included four volatile organic compounds, three metals, and cyanide. The ESD laboratory analyzed the samples for the complete inorganic target analyte list and the complete organic target compound list.

There was reasonable agreement between the two labs for the common organic analytes. The PRP's lab reported no positive hits in the split samples. The ESD lab reported trace levels of four volatile organic compounds in the Boutwell Spring sample. However, these concentrations were below the PRP's lab's minimum quantitation limits (MQLs).

There was good agreement between the two labs for the metals and cyanide except for zinc in the two water split samples. The PRP's lab reported 60 ug/L in the two water samples while the ESD lab reported none detected with a MQL of 10 ug/L. Zinc contamination was reported in the ESD supplied blind blank as well as the laboratory's method blank. Therefore it is likely

that the zinc reported in the two samples is due to contamination. Any zinc results reported by the laboratory may be biased high due to contamination.

The lab's performance on the ESD supplied blind QC samples was generally acceptable with the exception of zinc as noted above and the semi-volatile compounds in the soil blind spiked sample. None of the semi-volatile compounds present in the soil spiked sample were recovered by the lab. However, this may be insignificant if all of the organic target compounds at the site are volatiles. The laboratory's performance on the water semi-volatile spiked sample was acceptable.

Based on an overall assessment of the split sample and blind QC results, the PRP's data appear to be acceptable. Copies of the ESD split sample data and the PRP's data package are attached. Please contact me at FTS 250-3287 if you have any questions.

#### Attachments

cc: Bokey/Hall w/o attachments

### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV COLLEGE STATION RD. ATHENS, GA. 30613

\*\*\*\*MEMORANDUM\*\*\*\*\*

DATE: 12/10/91

SUBJECT: Results of Purgeable Organic Analysis;

HOWE VALLEY .92-0132 HOWEVALLEY KY

FROM: Frank Allen, Chemist

TO: WADE KNIGHT

THRU: Tom B. Bennett, Jr.

Chief, Organic Chemistry Section

Attached are the results of analysis of samples collected as part of the subject project.

If you have any questions please contact me.

ATTACHMENT

# SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA.

12/09/91

| PURGEABLE                              | E ORGANICS DATA REPORT   | ,  | _,,        |
|--|--|--|------------|
| ** SOU                                 | * * * * * * * * * * * * * * * * * * *                          | CITY: HOWEVALLEY ST: KY  | 0/00/00 ** |
| UG/L                                   | ANALYTICAL RESULTS   | UG/L ANALYTICAL RESULTS  |            |
| 00000000000000000000000000000000000000 | TION ID: GOODMAN SPRING  * * * * * * * * * * * * * * * * * * * | 5.0U CIS-1,3-DICHLOROPROPENE 12U METHYL ISOBUTYL KETONE 5.0U TOLUENE 5.0U TRANS-1,3-DICHLOROPROPENE 5.0U 1,1,2-TRICHLOROETHANE 5.0U TETRACHLOROETHENE(TETRACHLOROETHYLEN 5.0U 1,3-DICHLOROPROPANE 12U METHYL BUTYL KETONE 5.0U DIBROMOCHLOROMETHANE 5.0U CHLOROBENZENE 5.0U CHLOROBENZENE 5.0U 1,1,1,2-TETRACHLOROETHANE 5.0U ETHYL BENZENE 5.0U GM- AND/OR P-)XYLENE 5.0U G-XYLENE 5.0U STYRENE 5.0U BROMOFORM 5.0U BROMOFORM 5.0U BROMOFORM 5.0U BROMOPORM 5.0U 1,1,2,2-TETRACHLOROETHANE 5.0U 1,2,3-TRICHLOROPROPANE 5.0U 0-CHLOROTOLUENE 5.0U 0-CHLOROTOLUENE 5.0U 1,3-DICHLOROBENZENE 5.0U 1,4-DICHLOROBENZENE 5.0U 1,2-DICHLOROBENZENE | E)         |

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

<sup>\*</sup>A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

| PURGEABLE ORGANICS DATA REPORT   | ETA REGION IV ESD, ATTENS, GA.  | •   | 12,03,91                   |
|--|---|---|----------------------------|
| *** * * * * * * * * * * * * * * * * *  | TYPE: GROUNDWA PROG ELEM: SSF<br>CITY: HOWEVALLEY<br>COLLECTION START:  | COLLECTED BY: R MCKEEN ST: KY : 11/26/91 STOP: 00   | **<br>**<br>**<br>**<br>** |
| UG/L ANALYTICAL RESULTS  | UG/L  | * * * * * * * * * * * * * * * * * * *   | * * * * * * * * ***        |
| 5.0U CHLOROMETHANE 5.0U VINYL CHLORIDE 5.0U BROMOMETHANE 5.0U CHLOROFTHANE 5.0U TRICHLOROFLUOROMETHANE 5.0U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE) 50U ACETONE 12U CARBON DISULFIDE 5.0U METHYLENE CHLORIDE 5.0U TRANS-1,2-DICHLOROETHENE 1.1J 1,1-DICHLOROETHANE 3.3J CIS-1,2-DICHLOROETHENE 5.0U 2,2-DICHLOROPROPANE 5.0U 2,2-DICHLOROPROPANE 5.0U METHYL ETHYL KETONE 5.0U BROMOCHLOROMETHANE 5.0U CHLOROFORM 2.3J 1,1,1-TRICHLOROETHANE 5.0U CARBON TETRACHLORIDE 5.0U 1,2-DICHLOROPROPENE 5.0U CARBON TETRACHLORIDE 5.0U BENZENE 5.0U TICCHLOROPTOPANE 5.0U BENZENE 5.0U TICCHLOROPTOPANE 5.0U DIBROMOMETHANE 5.0U DIBROMOMETHANE 5.0U DIBROMOMETHANE | 12U METHYL BUTY 5.0U DIBROMOCHLO 5.0U CHLOROBENZE 5.0U 1,1,1,2-TET 5.0U ETHYL BENZE 5.0U (M- AND/OR 5.0U O-XYLENE 5.0U STYRENE 5.0U BROMOFORM 5.0U BROMOBENZEN 5.0U 1,1,2,2-TET | BUTYL KETONE DICHLOROPROPENE HLOROETHANE DETHENE (TETRACHLOROETHYLENE ROPROPANE L/L KETONE DROMETHANE ENE RACHLOROETHANE P-)XYLENE  RACHLOROETHANE HLOROPROPANE UENE UENE UENE UENE UBENE ROBENZENE ROBENZENE | )                          |

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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REGION IV COLLEGE STATION RD. ATHENS, GA. 30613

DATE: 12/13/91

SUBJECT: Results of Cyanide Analysis;

92-0132 HOWE VALLEY HOWEVALLEY KY

FROM: William H. McDaniel

TO: WADE KNIGHT

Attached are the results of analysis of samples collected as part of the subject project.

If you have any questions please contact me.

ATTACHMENT

\* \*

\* \* \* \*

SPECIFIED ANALYSIS DATA REPORT

PROG ELEM: SSF COLLECTED BY: R MCKEEN CITY: HOWEVALLEY ST: KY COLLECTION START: 11/25/91 STOP: PROJECT NO. 92-0132 SAMPLE NO. 63699 SAMPLE TYPE: GROUNDWA

SOURCE: HOWE VALLEY

\* \* STATION ID: GOODMAN SPRING

> RESULTS UNITS PARAMETE 4U UG/L CYANIDE PARAMETER

\*\*\*FOOTNOTES\*\*\* \*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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# SAMPLE AND ANALYSIS MANAGEMENT SYSTEM EPA-REGION IV ESD, ATHENS, GA

12/12/91

SPECIFIED ANALYSIS DATA REPORT

\* \*

PROJECT NO. 92-0132 SAMPLE SOURCE: HOWE VALLEY STATION ID: BOUTWELL SPRING SAMPLE NO. 63700 SAMPLE TYPE: GROUNDWA

PROG ELEM: SSF COLLECTED BY: R MCKEEN CITY: HOWEVALLEY COLLECTION START: 11/26/91 STOP:

RESULTS UNITS 4U UG/L PARAMETER CYANIDE

\*\*\*FOOTNOTES\*\*\* \*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT. SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 92-0132 SAMPLE NO. 63701 SAMPLE TYPE: SOIL

PROG ELEM: SSF COLLECTED BY: R MCKEEN CITY: HOWEVALLEY ST: KY COLLECTION START: 11/26/91 STOP:

SOURCE: HOWE VALLEY STATION ID: 1.5 D/C

\*\*

STOP: 00/00/00

RESULTS UNITS PARAMETER 0.92 MG/KG CYANIDE

\*\*\*FOOTNOTES\*\*\* \*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV COLLEGE STATION RD. ATHENS, GA. 30613

\*\*\*\*MEMORANDUM\*\*\*\*

DATE: 01/08/92

SUBJECT: Results of Extractable Organic Analysis;

92-0132 HOWE VALLEY HOWEVALLEY KY

TO: WADE KNIGHT

THRU: Tom B. Bennett, Jr. Chief, Organic Chemistry Section

Attached are the results of analysis of samples collected as part of the subject project.

If you have any questions please contact me.

ATTACHMENT

| FXTRACT  | ABLE ORGANICS DA   | TA REPORT   |                        | LFA KLUION IV LJ                  | D, AIN   | -NS, GA.  |  |   | 01/07/92                                 |
|--|--|---|------------------------|-----------------------------------|--|---|--|---|--|
| *** * *<br>** PRO<br>** SOO<br>** STA                              | * * * * * * * * * * * * * * * * * * *  | TA REPORT  * * * * * * * * *  2    SAMPLE NO. 636  Y N SPRING . | * * * * *<br>99 SAMPLE | * * * * * * * *<br>TYPE: GROUNDWA | PROG<br>CITY<br>COLLE  | * * * * * * *<br>ELEM: SSF (<br>: HOWEVALLEY<br>ECTION START:   | * * * * * * * * * * * * * * * * * * *  | * * * * * *<br>MCKEEN<br>Y<br>STOP: 00/00 | * * * * * * * ***<br>**<br>**<br>0/00 ** |
| *** * *<br>UG/I  | * * * * * * * * * * * * * * * * * * *  | ANALYTICAL RESULT   | * * * * *              | * * * * * * * *                   | * * * * *<br>UG/L  |   | * * * * * * * * * * * * * * * * * * *  | * * * * * * *<br>ULTS                     | * * * * * * * **                         |
| 100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100 | (3~AND/OR 4-)  1,2,4-TRICHLOR  2,2'-CHLOROIS  2,3,4,6-TRICHLOR  2,4,5-TRICHLOR  2,4-DINETHYLP  2,4-DINITROPH  2,4-DINITROTOI  2,6-DINITROTOI  2-CHLORONAPHTH  2-CHLORONAPHTH  2-METHYL-4.6-I  2-METHYL-4.6-I  2-METHYL-HENOI  2-NITROANILINE  4-BROMOPHENOL  3,3'-DICHLOROE  3-NITROANILINE  4-CHLOROANILINE  4-NITROPHENOL  ACENAPHTHENE  ACENAPHTHENE  ANTHRACENE  BENZO(A)ANTHRA  BENZO(B AND/OF | * * * * * * * * * * * * * * * * * * *                           |                        |                                   | 100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100 | BENZO(GHI)PE<br>BENZO-A-PYRE<br>BENZO-A-PYRE<br>BENZYL BUTYL<br>BIS(2-CHLORG<br>BIS(2-ETHYLF<br>CARBAZOLE<br>CHRYSENE<br>DI-N-BUTYLPF<br>DIBENZO(A,H)<br>DIBENZO(A,H)<br>DIBENZOFURAM<br>DIBENZOFURAM<br>DIBENZOFURAM<br>DIBENZOFURAM<br>PHTHOLOROFI<br>FLUORANTHENE<br>FLUORANTHENE<br>FLUORANTHENE<br>HEXACHLOROBE<br>HEXACHLOROBE<br>HEXACHLOROBE<br>HEXACHLOROET<br>INDENO (1,2,<br>ISOPHORONE<br>N-NITROSODIF<br>N-NITROSODIF<br>N-NITROSODIF<br>NAPHTHALENE<br>NITROBENZENE<br>PENTACHLOROP<br>PHENANTHRENE<br>PHENANTHRENE<br>PHENOL<br>PYRENE | RYLENE NE PHTHALATE DETHOXY) METHANE DETHOXY) METHANE DETHYL) ETHER HEXYL) PHTHALATE HTHALATE HTHALATE HALATE HALA | HCCP)<br>ENYLAMINE                        |  |

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

<sup>\*</sup>A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

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EXTRACTABLE ORGANICS DATA REPORT
PROJECT NO. 92-0132 SAMPLE NO. 63700 SAMPLE TYPE: GROUNDWA PROG ELEM: SSF. COLLECTED BY: R MCKEEN SURCE: HOWE VALLEY STATION ID: BOUTWELL SPRING PROG ELEM: SSF. COLLECTED BY: R MCKEEN CITY: HOWEVALLEY ST: KY COLLECTION START: 11/26/91 STOP: 00/00/00
* *
   ANALYTICAL RESULTS
         ANALYTICAL RESULTS
         (3-AND/OR 4-)METHYLPHENOL
1,2,4-TRICHLOROBENZENE
                                                                         BENZO(GHI)PERYLENE
   100
                                                                    100
                                                                         BENZO-A-PYRENE
                                                                         BENZYL BUTYL PHTHALATE
         2,2'-CHLOROISOPROPYLETHER
                                                                    100
   100
         2,3,4,6-TETRACHLOROPHENOL
                                                                          BIS(2-CHLOROETHOXY) METHANE
   100
                                                                    100
         2.4.5-TRICHLOROPHENOL
                                                                    100
                                                                         BIS(2-CHLOROETHYL) ETHER
   100
                                                                         BIS(2-ETHYLHEXYL) PHTHALATE
   100
         2,4,6-TRICHLOROPHENOL
                                                                    100
         2,4-DICHLOROPHENOL
   10Ú
                                                                    100
                                                                         CARBAZOLE
                                                                         CHRYSENE
   100
         2,4-DIMETHYLPHENOL
                                                                    100
                                                                         DI-N-BUTYLPHTHALATE
                                                                    100
   20U
         2.4-DINITROPHENOL
   10Ŭ
         2,4-DINITROTOLUENE
                                                                    100
                                                                         DI-N-OCTYLPHTHALATE
   100
         2,6-DINITROTOLUENE
                                                                    100
                                                                         DIBENZO(A.H)ANTHRACENE
   100
         2-CHLORONAPHTHALENE
                                                                    100
                                                                         DIBENZOFUŔAŃ
                                                                         DIETHYL PHTHALATE
   100
         2-CHLOROPHENOL
                                                                    100
                                                                         DIMETHYL PHTHALATE
         2-METHYL-4.6-DINITROPHENOL
                                                                    100
   20U
   TOŬ
         2-METHYLNAPHTHALENE
                                                                    100
                                                                         FLUORANTHENE
                                                                    100
                                                                         FLUORENE
   10U
         2-METHYLPHENOL
                                                                         HEXACHLOROBENZENE (HCB)
   100
         2-NITROANILINE
                                                                    100
   10U
         2-NITROPHENOL
                                                                    100
                                                                         HEXACHLOROBUTADIENE
         3,3'-DICHLOROBENZIDINE
3-NITROANILINE
   100
                                                                    10U
                                                                         HEXACHLOROCYCLOPENTADIENE (HCCP)
                                                                         HEXACHLOROETHANE
   10Ú
                                                                    100
         4-BROMOPHENYL PHENYL ETHER
                                                                         INDENO (1,2,3-CD) PYRENE
   10U
                                                                    100
         4-CHLORO-3-METHYLPHENOL
                                                                         ISOPHORÒNÉ
   100
                                                                    100
         4-CHLOROANILINE
                                                                         N-NITROSODI-N-PROPYLAMINE
                                                                    100
   100
                                                                         N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
   100
         4-CHLOROPHENYL PHENYL ETHER
                                                                    100
   100
         4-NITROANILINE
                                                                    100
                                                                         NAPHTHALENE
   20Ŭ
         4-NITROPHENOL
                                                                    100
                                                                         NITROBENZENE
                                                                         PENTACHLOROPHENOL
                                                                    20U
   100
         ACENAPHTHENE
         ACENAPHTHYLENE
                                                                    100
                                                                         PHENANTHRENE
   100
         ANTHRACENE
   100
                                                                    100
                                                                         PHENOL
         BENZO(A)ANTHRACENE
   100
                                                                         PYRENE
```

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

SAMPLE NOT FOUND IN NEWLOG 64570

BENZO(B AND/OR K) FLUORANTHENE

<sup>\*</sup>A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV COLLEGE STATION RD. ATHENS, GA. 30613

\*\*\*\*MEMORANDUM\*\*\*\*\*

DATE: 01/17/92

SUBJECT: Results of Metals Analysis;

92-0132 HOWE VALLEY HOWEVALLEY KY

FROM: Mike Wasko, Chemist

TO: WADE KNIGHT

THRU: William H. McDaniel Market Chief, Inorganic Chemistry Section

Attached are the results of analysis of samples collected as part of the subject project.

If you have any questions please contact me.

ATTACHMENT

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM

EPA-REGION IV ESD, ATHENS, GA. 01/16/92 METALS DATA REPORT

PROJECT NO. 92-0132 SAMPLE NO. 63699 SAMPLE TYPE: GROUNDWA PROG ELEM: SSF COLLECTED BY: R MCKEEN ST. KY
SOURCE: HOWE VALLEY ST. KY
STATION ID: GOODMAN SPRING COLLECTION START: 11/25/91 STOP: 00/00/00 \* \* \* \* \* \* \* \*

MG/L ANALYTICAL RESULTS UG/L ANALYTICAL RESULTS

30 CALCIUM 10U SILVER 30U ARSENIC 2.0 MAGNESIUM NA BORON 0.68 IRON 1.6 SODIUM 36 BARIUM 5.OU BERYLLIUM 2.00 POTASSIUM

5.00 CADMIUM 100 COBALT CHROMIUM 10U

100 MOLYBDENUM 200 NICKEL 40U LEAD 300 ANTIMONY

COPPER

SELENIUM TIN 40U 25U

100

STRONTIUM TELLURIUM 55 50Ŭ 10 TITANIUM

100U THALLIUM 10U VANADIUM 100 YTTRIUM

10U ZINC NA ZIRCONIUM O. 2U MERCURY

600 ALUMINUM 48 MANGANESE

\*\*\*REMARKS\*\*\* \*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\* \*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM

EPA-REGION IV ESD. ATHENS, GA. 01/16/92 METALS DATA REPORT

PROJECT NO. 92-0132 SAMPLE NO. 63700 SAMPLE TYPE: GROUNDWA PROG ELEM: SSF COLLECTED BY: R MCKEEN CITY: HOWEVALLEY ST: KY
COLLECTION START: 11/26/91 SOURCE: HOWE VALLEY \* \* \* \* STOP: 00/00/00 STATION ID: BOUTWELL SPRING \* \* \* \* \* \* \* \*

MG/L ANALYTICAL RESULTS ANALYTICAL RESULTS

49 CALCIUM 10U SILVER 3.5 MAGNESIUM 30U ARSENIC NΑ BORON 1.1 IRON 31 BARIUM 1.4 SODIUM 5.00 BERYLLIUM 2.OU POTASSIUM 5.00 CADMIUM COBALT CHROMIUM 100

NICKEL 20U 40U LEAD 30U ANTIMONY 40U SELENIUM 25U TIN STRONTIUM TELLURIUM 150 50Ü TITANIUM 21 10ŌÜ THALLIUM 10U VANADIUM 10U YTTRIUM 10U ZINC NA ZIRCONIUM O.2U MERCURY 1400 ALUMINUM 20 MANGANESE

\*\*\*REMARKS\*\*\* \*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

10U 100

COPPER 100 MOLYBDENUM

<sup>\*</sup>A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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| METALS DATA REPORT  METALS DATA REPORT |  |   |  |  |
|--|--|---|--|--|
| ** * * * * * * * * * * * * * * * * * * | E TYPE: SOIL PROG ELEM: SSF COLLECTED BY: R MCKEEN CITY: HOWEVALLEY ST: KY | * * * * * * * * * ***<br>**<br>00/00/00<br>** |  |  |
| *** * * * * * * * * * * * * * * * * *  | * * * * * * * * * * * * * * * * * * *                                      | *       |  |  |

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

<sup>\*</sup>A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV COLLEGE STATION RD. ATHENS, GA. 30613

\*\*\*\*MEMORANDUM\*\*\*\*\*

DATE: 01/29/92

SUBJECT: Results of Pesticide/PCB Analysis;

92-0132 HOWE VALLEY HOWEVALLEY KY

FROM: Lavon Revells, Chemist

TO: WADE KNIGHT

THRU: Tom B. Bennett, Jr.
Chief, Organic Chemistry Section

Attached are the results of analysis of samples collected as part of the subject project.

If you have any questions please contact me.

ATTACHMENT

```
PESTICIDES/PCB'S DATA REPORT
PROJECT NO. 92-0132 SAMPLE NO. 63699 SAMPLE TYPE: GROUNDWA PROG ELEM: SSF COLLECTED BY: R MCKEEN STATION ID: GOODMAN SPRING STOP: 00/00/00
* *
**
                                                                                                                    * *
UG/L ANALYTICAL RESULTS
          ANALYTICAL RESULTS
                                                                    PCB-1232 (AROCLOR 1232)
PCB-1248 (AROCLOR 1248)
PCB-1260 (AROCLOR 1260)
 0.100
        ALDRIN
        HEPTACHLOR
 0.100
                                                              1.20
        HEPTACHLOR EPOXIDE
 0.100
                                                              1.20
                                                                    PCB-1016 (AROCLOR 1016)
0.0500
        ALPHA-BHC
                                                              1.20
 0.100
        BETA-BHC
                                                               100
                                                                    TOXAPHENE
                                                                    CHLORDENE /2
ALPHA-CHLORDENE
BETA CHLORDENE
0.0500
        GAMMA-BHC (LINDANE)
 0.100
        DELTA-BHC
                                                                                  /2
 0.100
        ENDOSULFAN I (ALPHA)
 0.10U
        DIELDRIN
                                                                    GAMMA-CHLORDENE
        4,4'-DDT (P,P'-DDT)
4,4'-DDE (P,P'-DDE)
4,4'-DDD (P,P'-DDD)
                                                                    GAMMA-CHLORDANE
 0.250
 0.100
                                                                    TRANS-NONACHLOR
                                                                                    1/2
 0.200
                                                                    ALPHA-CHLORDANE
                                                                                    /2
        ENDRIN
                                                                    CIS-NONACHLOR
 0.200
                                                               __
 0.200
        ENDOSULFAN II (BETA)
                                                                    OXYCHLORDANE (OCTACHLOREPOXIDE) /2
        ENDOSULFAN SULFATE
 0.300
                                                             0.500
                                                                    METHOXYCHLOR
        CHLORDANE (TECH. MIXTURE) /1
                                                                    ENDRIN KETONE
 0.640
                                                             0.250
        PCB-1242 (AROCLOR 1242)
PCB-1254 (AROCLOR 1254)
  1.20
  1.20
```

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

PCB-1221 (AROCLOR 1221)

<sup>\*</sup>NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

<sup>\*</sup>X-AVENAGE VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE REATER THAN VALUE GIVEN \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT. C-CONFIRM 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS. 2. CONSTITUENTS OR METABOLITES OF TECHNICAL CHLORDANE. C-CONFIRMED BY GC/MS

```
PESTICIDES/PCB'S DATA REPORT
* *
* *
                                                                                                     * *
                                                                                                     **
UG/L
                  ANALYTICAL RESULTS
                                                           ANALYTICAL RESULTS
                                                           PCB-1232 (AROCLOR 1232)
PCB-1248 (AROCLOR 1248)
 0.100
       ALDRIN
 0.100
       HEPTACHLOR
                                                      1.20
       HEPTACHLOR EPOXIDE
 0.100
                                                      1.20
                                                            PCB-1260 (AROCLOR 1260)
                                                            PCB-1016 (AROCLOR 1016)
0.0500
       ALPHA-BHC
                                                      1.20
 0.100
       BETA-BHC
                                                       100
                                                            TOXAPHENE
0.0500
       GAMMA-BHC (LINDANE)
                                                           CHLORDENE /2
ALPHA-CHLORDENE
BETA CHLORDENE
                                                            CHLORDENE
 0.100
       DELTA-BHC
                                                                        /2
 0.100
       ENDOSULFAN I (ALPHA)
                                                            GAMMA-CHLORDENE
 0.100
       DIELDRIN
       4.4'-DDT (P,P'-DDT)
4.4'-DDE (P,P'-DDE)
4.4'-DDD (P,P'-DDD)
 0.250
                                                            GAMMA-CHLORDANE
 0.100
                                                            TRANS-NONACHLOR
                                                                          /2
 0.200
                                                            ALPHA-CHLORDANE
                                                                          /2
                                                            CIS-NONACHLOR
 0.200
       ENDRIN
                                                       --
 0.200
       ENDOSULFAN II (BETA)
                                                            OXYCHLORDANE (OCTACHLOREPOXIDE) /2
 0.300
       ENDOSULFAN SULFATE
                                                     0.500
                                                           METHOXYCHLOR
 0.620
       CHLORDANE (TECH. MIXTURE) /1
                                                     0.250
                                                           ENDRIN KETONE
       PCB-1242 (AROCLOR 1242)
PCB-1254 (AROCLOR 1254)
PCB-1221 (AROCLOR 1221)
  1.20
  1.20
```

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

<sup>\*</sup>A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT. C-CONFIRMED BY GC/MS
1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS. 2. CONSTITUENTS OR METABOLITES OF TECHNICAL CHLORDANE.

REGION IV COLLEGE STATION RD. ATHENS, GA. 30613

\*\*\*\*MEMORANDUM\*\*\*\*\*

DATE: 02/04/92

SUBJECT: Results of Pesticide/PCB Analysis;

92-0132 HOWE VALLEY HOWEVALLEY KY

FROM: Lavon Revells, Chemist Har

TO: WADE KNIGHT

THRU: Tom B. Bennett, Jr.
Chief, Organic Chemistry Section

Attached are the results of analysis of samples collected as part of the subject project.

If you have any questions please contact me.

ATTACHMENT

```
PESTICIDES/PCB'S DATA REPORT
PROJECT NO. 92-0132 SAMPLE NO. 63701 SAMPLE TYPE: SOIL PROGELEM: SSF COLLECTED BY: R MCKEEN STERM STATION ID: 1.5 D/C COLLECTION START: 11/26/91 STOP: 00/00/00
* *
                                                                                                                           **
* *
                                                                                                                           * *
                                                                                                                           **
UG/KG ANALYTICAL RESULTS
                                                                   UG/KG ANALYTICAL RESULTS
       ALDRIN
HEPTACHLOR
HEPTACHLOR EPOXIDE
                                                                        PCB-1232 (AROCLOR 1232)
PCB-1248 (AROCLOR 1248)
PCB-1260 (AROCLOR 1260)
                                                                  1900
   150
                                                                  190U
                                                                  1900
   15Ú
   7.50
         ALPHA-BHC
                                                                  1900
                                                                         PCB-1016 (AROCLOR 1016)
         BETA-BHC
   150
                                                                 15000
                                                                         TOXAPHENE
                                                                        CHLORDENE /2
ALPHA-CHLORDENE
   7.50
         GAMMA-BHC (LINDANE)
         DELTA-BHC
ENDOSULFAN I (ALPHA)
   15U
   15Ŭ
                                                                         BETA CHLORDENE
                                                                   __
   150
         DIELDRIN
                                                                         GAMMA-CHLORDENE
         4.4'-DDT (P.P'-DDT)
4.4'-DDE (P.P'-DDE)
                                                                         GAMMA-CHLORDANE
   380
   150
                                                                         TRANS-NONACHLOR
                                                                                          1/2
         4.4'-DDD (P,P'-DDD)
                                                                         ALPHA-CHLORDANE
                                                                                          /2
   300
   300
         ENDRIN
                                                                         CIS-NONACHLOR
   30Ŭ
                                                                         OXYCHLORDANE (OCTACHLOREPOXIDE) /2
         ENDOSULFAN II (BETA)
                                                                   __
         ENDOSULFAN SULFATE
CHLORDANE (TECH. MIXTURE) /1
   38Ŭ
                                                                   76U
                                                                        METHOXYCHLOR
                                                                        ENDRIN KETONE
   9411
                                                                   380
        PCB-1242 (AROCLOR 1242)
PCB-1254 (AROCLOR 1254)
PCB-1221 (AROCLOR 1221)
                                                                         PERCENT MOISTURE
   190U
   1900
  1900
```

\*\*\*REMARKS\*\*\* \*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

<sup>\*</sup>NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

<sup>\*</sup>K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT. C-CONFIRM 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS. 2. CONSTITUENTS OR METABOLITES OF TECHNICAL CHLORDANE. C-CONFIRMED BY GC/MS



### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

March 10, 1992

Ms. Joan Colson Environmental Specialist Technical Support Branch, RREL Mail Code: 489 26 Martin Luther King Drive Cincinnati, Ohio 45268

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Ms. Colson:

As we discussed today by telephone, I have enclosed for review the Treatability Study for the Howe Valley Landfill NPL Site, titled Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils. Also enclosed are copies of background information related to the native soils (obtained from the Remedial Investigation Report), and a description of the final remedy selected in the Record of Decision. Please review the document to determine if it is technically acceptable and meets EPA guidance criteria.

Return any comments or suggestions by April 10, 1992. Your assistance on this project is very much appreciated.

If you have any questions, or would like to discuss the project further, please feel free to call me at (404) 347-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

March 10, 1992

Mr. Ralph P. McKeen, P.E. Work Assignment Manager Roy F. Weston, Inc. 6021 Live Oak Parkway Norcross, Georgia 30093

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Mr. McKeen:

Enclosed for your review is the Draft Inorganic Design Plan for the Howe Valley Landfill NPL Site. Please review this document to determine if it is technically acceptable and meets EPA guidance criteria. Return any comments or suggestions by April 3, 1992.

Consider this letter an authorization to begin the Prefinal/Final Remedial Design Review (Task 4C) for the inorganic contaminated areas. This authorization is exclusively for initiation and partial completion of Task 4C for the inorganic contaminated areas, as outlined in the RD/RA Oversight Work Plan (Revision 0). Since this document is only a part of the final remedy design for the site, the approved estimated Professional Level of Effort (LOE) for this task shall not exceed 18 hours.

Should you have any questions, don't hesitate to call me at (404) 347-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.

pc: Charles Swan, EPA

Lester Lewis, EPA



March 4, 1992

Mr. Nestor Young Remedial Project Manger U.S. EPA, Region IV 345 Courtland St. NE Atlanta, GA. 30365

> Re: Howe Valley Landfill Progress Report #9

Laboratory Reports

Dear Mr. Young:

Here are six copies of the laboratory reports which accompanied the February Progress Report. Please call if you have any questions.

Sincerely,

HATCHER SAYRE,

James D. Knauss, Ph.D.

Project Manager

attachments

cc: Ed Ovsenik w/o

Jim Mersereau-Kempf w/o

JDK/bh



### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

March 5, 1992

Mr. Kenneth Skahn, P.E.
U.S. EPA OERR
Design and Construction
Management Branch
401 M Street, S.W. (OS-220W)
Washington D.C. 20460

RE: Howe Valley Landfill NPL Site.

Dear Mr. Skahn:

Attached is the Draft Inorganic Design (Construction) Plan for the Howe Valley site. This plan should represent the complete (prefinal/final) remedial design for the inorganic contaminated areas of the site. Please review this document and provide any comments by April 3.

You should recall that the EPA is allowing Dow Corning to consider the metals contaminated areas separate from the organic contaminated areas for submittal of the required reporting documents. This will allow a quicker implementation of the remedy for the metals contaminated areas.

If you have any questions, feel free to call at FTS 257-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

March 5, 1991

Mr. Carl Millanti, Manager
Uncontrolled Sites Branch
Kentucky Natural Resources and
Environmental Protection Cabinet
Department for Environmental Protection
Frankfort Office Park
18 Reilly Road
Frankfort, KY 40601

RE: Howe Valley Landfill NPL Site, Hardin County, Kentucky

Dear Mr. Millanti:

Attached is the Draft Inorganic Design (Construction) Plan for the Howe Valley site. This plan should represent the complete (prefinal/final) remedial design for the inorganic contaminated areas of the site. Please review this document and provide any comments by April 3.

The Environmental Protection Agency is allowing Dow Corning to consider the metals contaminated areas separate from the organic contaminated areas for submittal of the required reporting documents. This will allow a quicker implementation of the remedy for the metals contaminated areas.

If you have any questions, feel free to call at (404) 347-7791.

Sincerely,

Nestor Young //

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.

pc: Pat Haight, KNREPC



March 3, 1992

Edward C. Ovsenik, Esq. Dow Corning Corporation 2200 Salzburg Rd. CO1242 Midland, MI. 48686-0994

Re: Draft Inorganic Design Plan
Howe Valley Landfill
Hardin County Kentucky

Hardin County, Kentucky Job No. 0064-001

Dear Mr. Ovsenik:

Enclosed is your copy of the referenced plan. As we discussed, I am sending six copies of the draft plan directly to Mr. Nestor Young, U.S. EPA.

Please call if you have any questions.

Sincerely,

James D. Knauss, Ph.D.

Rroject Manager

attachment

cc: Nestor Young

James Mersereau-Kempf

Carroll Coogle

JDK/bh



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

March 3, 1992

Mr. Ralph P. McKeen, P.E. Work Assignment Manager Roy F. Weston, Inc. 6021 Live Oak Parkway Norcross, Georgia 30093

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Mr. Millanti:

Enclosed for your review is the Treatability Study for the Howe Valley Landfill NPL Site, titled Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils. Please review this document to determine if it is technically acceptable and meets EPA guidance criteria. Return any comments or suggestions by March 27, 1992.

Although the Oversight Work Plan and budget has not been formally approved yet, consider this letter an authorization to begin the Treatability Study Work Plan Review (Task 4A). This authorization is exclusively for initiation and completion of Task 4A, as outlined in the RD/RA Oversight Work Plan (Revision 0). The approved estimated Professional Level of Effort (LOE) for this task shall not exceed 30 hours.

If there are any questions, please feel free to call me at (404) 347-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.

pc: Charles Swan, EPA Lester Lewis, EPA



### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

March 3, 1992

Mr. Carl Millanti, Manager
Uncontrolled Sites Branch
Kentucky Natural Resources and
Environmental Protection Cabinet
Department for Environmental Protection
Frankfort Office Park
18 Reilly Road
Frankfort, KY 40601

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

\*

Dear Mr. Millanti:

Enclosed for your Department's review is the Treatability Study for the Howe Valley Landfill NPL Site, titled Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils. Please review this document to determine if it is technically acceptable and meets your Department's approval.

Return any comments or suggestions by March 27, 1992. Your Department's continued assistance on this project is very much appreciated.

If there are any questions, please feel free to call me at (404) 347-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section North Superfund Remedial Branch

Enclosure.

pc: Pat Haight, KNREPC



### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

March 3, 1992

Mr. Kenneth Skahn, P.E.
U.S. EPA OERR
Design and Construction
Management Branch
401 M Street, S.W. (OS-220W)
Washington D.C. 20460

RE: Howe Valley Landfill NPL Site.

Dear Mr. Skahn:

Enclosed for your review is the Treatability Study for the Howe Valley Landfill NPL Site, titled Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils. Please review this document to determine if it is technically acceptable and meets EPA guidance criteria.

Return any comments or suggestions by March 27, 1992. Your continued assistance on this project is very much appreciated.

If you have any questions, please feel free to call me at (404) 347-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

our

North Superfund Remedial Branch

Enclosure.



### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

March 3, 1992

Mr. William R. Bokey, Chief Hazardous Waste Section Environmental Compliance Branch U.S. EPA Environmental Services Division 960 College Station Road Athens, GA 30613-0801

RE: Howe Valley Landfill NPL Site, Howe Valley, Hardin County, Kentucky.

Dear Mr. Bokey:

Enclosed for your Department's review is the Treatability Study for the Howe Valley Landfill NPL Site, titled Bench-Scale Test Protocol: Effect of Roto-Tilling on VOC Volatilization from Howe Valley Soils. Please review this document to determine if it is technically acceptable and meets EPA guidance criteria.

Return any comments or suggestions by March 27, 1992. Your Department's continued assistance on this project is very much appreciated.

If there are any questions, please feel free to call me at FTS 257-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

Enclosure.

DOW CORNING

**NORTH SUPERFUND** 

FEB 26 2 18 PM '92

REMEDIAL BRANCH

February 25, 1992

Mr. Nestor Young Remedial Project Manager Waste Management Division US EPA Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

Treatability Study Re: Howe Valley Landfill Hardin County, Kentucky

Dear Mr. Young:

Enclosed are six (6) copies of the Bench Scale Test Protocol: Effect of Rototilling on VOC Volatilization from Howe Valley Soils. This protocol was developed by The Dragun Corporation for the Dow Corning Corporation. If you have any questions concerning this report, please give me a call.

Sincerely,

James Mersereau-Kempf Environmental Geologist

James Mersereau Kerryst

cc: E. C. Ovsenik Carroll Coogle James Dragun James Knauss

February 25, 1992

Mr. Nestor Young Remedial Project Manager Waste Management Division US EPA Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

Re: Treatability Study Howe Valley Landfill Hardin County, Kentucky

Dear Mr. Young:

Enclosed are six (6) copies of the Bench Scale Test Protocol: Effect of Rototilling on VOC Volatilization from Howe Valley Soils. This protocol was developed by The Dragun Corporation for the Dow Corning Corporation. If you have any questions concerning this report, please give me a call.

Sincerely,

James Mersereau-Kempf
Environmental Geologist

Cc: E. C. Ovsenik Carroll Coogle James Dragun James Knauss

N. Young

### ENVIRONMENTAL SERVICES ASSISTANCE TEAM SAMPLE CONTROL OFFICE ATLANTA, GEORGIA

SPLIT SAMPLE DATA REMINDER (TID No. 04-9012-577/Document Control No. ESAT-4C-435)

DATE: FEB 2 1 1992

THE DATA FROM THE NON-CLP/PRP LABORATORY WHICH CORRESPONDS TO THE FOLLOWING SPLIT SAMPLES SHOULD BE SUBMITTED FOR REVIEW AS SOON AS IT BECOMES AVAILABLE. SPIKE AND BLANK DATA MUST BE INCLUDED IF APPLICABLE. REFER TO THE MARCH 1, 1991 SAMPLE CONTROL MEMO (Document Control No. ESAT-4C-429) FOR INSTRUCTIONS. DIRECT QUESTIONS TO NARDINA TURNER AT x7791.

PROJECT NAME

Green River Disposal Howe Valley LF

SAMPLING PERIOD

11/20/91

11/25/91



February 13, 1992

Mr. Nestor Young USEPA, Region IV 345 Courtland St. NE Atlanta, GA. 30365

Re: Additional Sampling
Howe Valley Landfill
Hardin County, Kentucky
Job No. 0064-001

Dear Mr. Young:

This letter serves as a follow-up to our conversation of February 6, 1992 regarding additional sampling at the Howe Valley Landfill in Hardin County, Kentucky. The sampling methodology in the Final Remedial Design (RD) Sampling and Analysis Plan (SAP) provided for sampling at the inorganic "hotspots" as identified by the post-removal sampling results. From these "hotspots", the RDSAP specified sampling along the N-S-E-W axes, 10 feet from the center and 20 feet from the center. A diagram depicting this methodology is included at Attachment 1.

While drilling to extract the subsurface samples at 7,D, slightly discolored soils were encountered 2.5 feet below the surface at the 20-foot interval in the north and west directions. Based on the discolorization, we submitted the supplemental samples for analyses for the 20-foot interval. Attachment 2 depicts the sampling locations and results of analyses.

Based on the analyses, the "hotspot" at 1.5,D apparently has been defined. However, 7,D is still above the SAL for chromium along the E-W axis for the surface, as well as north and west sectors for the subsurface. The south sector apparently has been defined.

We proposed and gained verbal approval from you to extend the sampling program to the north, east and west. To maintain consistency with the RDSAP, sampling was extended to the 30-foot and 40-foot intervals. As in the specified sampling plan, both surface and subsurface samples were collected. All samples in the 30-foot perimeter were submitted for analyses. The samples for the 40-foot perimeter will be analyzed only if those in the 30-foot perimeter are above the SAL.



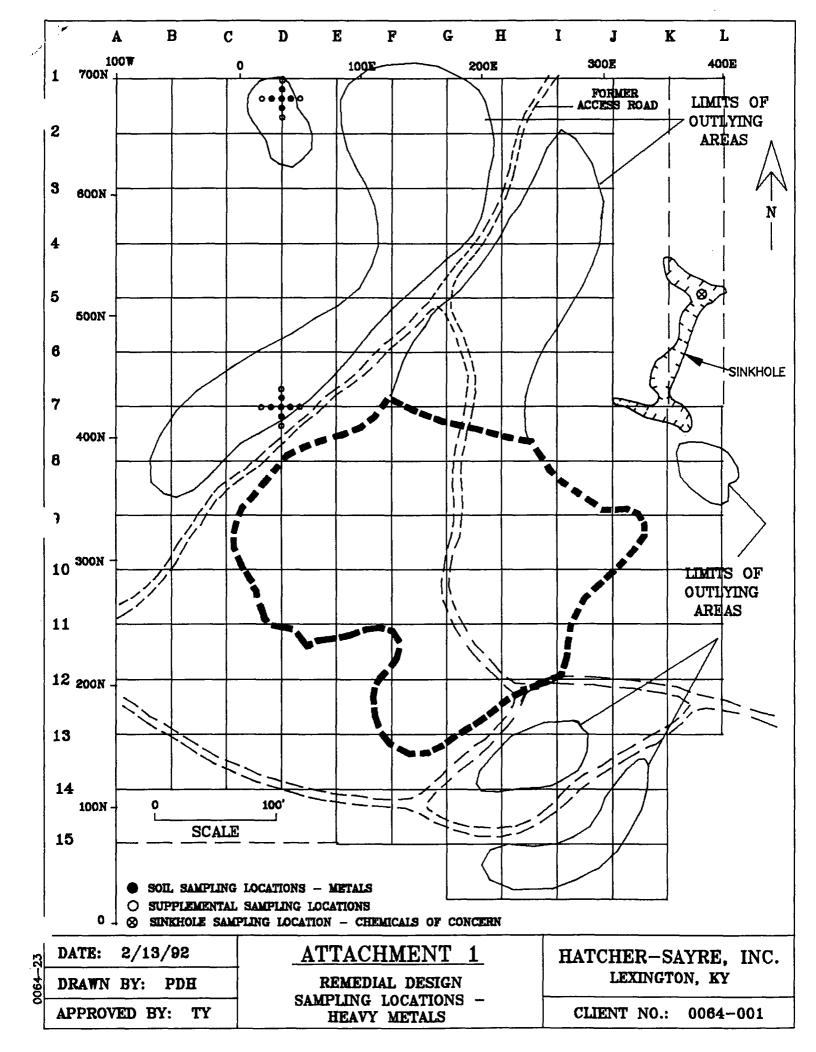
As always, if you have any questions or require further information, please contact me at your convenience.

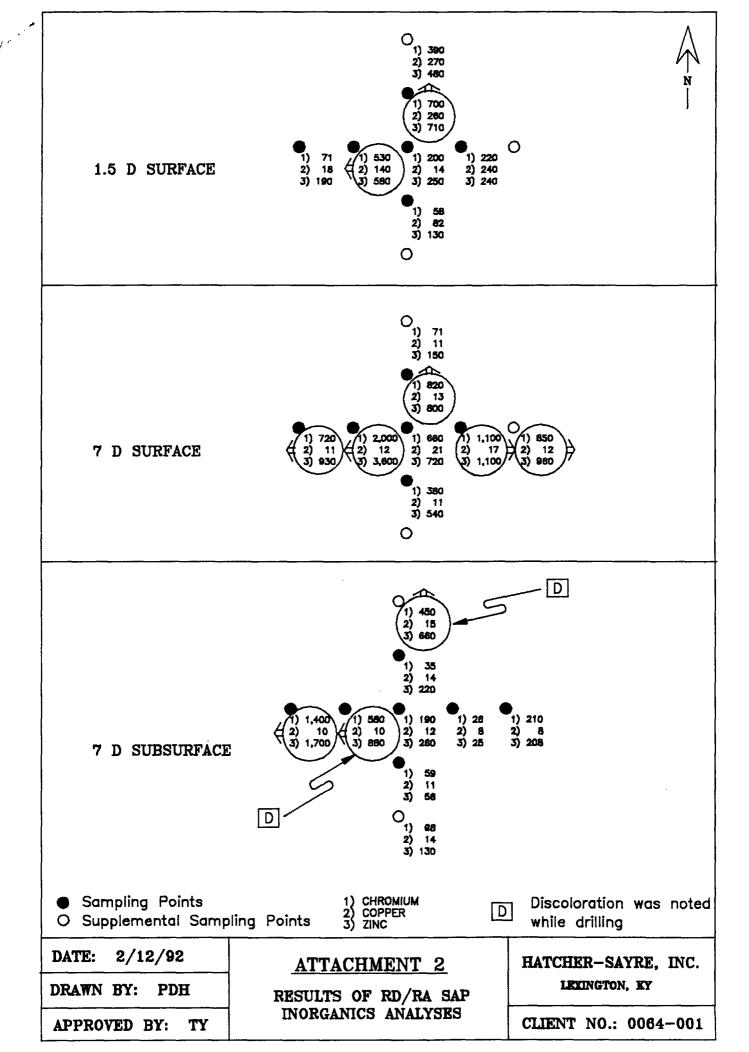
Sincerely,

Fimothy J. Young Vice President, Environmental Services

attachments

TJY/bh





# HOWE VALLEY LANDFILL SUPERFUND SITE TREATABILITY STUDY MEETING

# JANUARY 23, 1992

| NAME                | COMPANY/AFFILIATION   | PHONE NUMBER  |
|---------------------|-----------------------|---------------|
| Fin haven           | Hatoler Song Inc      | (602)271-0269 |
| I'M DRAGOUI         |                       | 313-542-2420  |
| Jim Mersereau - Kem | of Dow Corning        | 517-496-5813  |
| Harolet Tails       | EPA /Super kund       | (404)347-7991 |
| Mater Jours         | EPA                   | 404-547-7791  |
| V                   |                       |               |
|                     |                       |               |
|                     |                       |               |
|                     |                       |               |
|                     |                       |               |
|                     |                       |               |
|                     | * AFTER 2/1.          | NEW WIRMBER   |
|                     | *AFTER 2/1,<br>15 313 | -937-0228     |
| BERT LEVEL          |                       | 772 000       |
|                     |                       |               |
|                     |                       |               |
|                     |                       |               |
|                     |                       |               |
|                     |                       |               |



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

OCT 2 3 1991

Edward C. Ovsenik, Esq. Dow Corning Corporation Staff Attorney Admin Law C01242 Midland Michigan 48686-0994

RE: Howe Valley Landfill Superfund Site, Howe Valley, Kentucky Access Easement

Dear Mr. ovsenik:

The United States Environmental Protection Agency ("EPA") has completed review of the draft Easement Agreement from Dow Corning Corporation to the United States of America ("USA"), sent by letter dated July 12, 1991. Pursuant to Article V. F(3) of the Consent Decree between Dow Corning and the USA, entered May 22, 1991, in the United States District Court for the Western District of Kentucky (the "Consent Decree"), the easement must be satisfactory in form and substance to Plaintiff, the USA. Therefore, EPA requests that you make the following changes to the draft document.

- 1. The easement should be granted to the United States of America, including any agency or department thereof including the EPA, rather than granted just to EPA.
- 2. In the first paragraph, the easement should be granted for the purposes of monitoring and implementing the activities required under and contemplated by the Consent Decree.
- 3. The Site is approximately 11 acres and should be described as set forth in the Consent Decree, rather than according to a legal description.
- 4. The fourth paragraph should grant full right and authority to the United States, its successors or assigns, and its representatives, including but without limitation, the EPA, its employees and contractors, to enter upon the premises.
- 5. The fifth paragraph should be deleted in its entirety. The government will not grant an indemnity to Dow Corning in this agreement. All of Dow Corning's rights of recourse are clearly set forth in the Consent Decree.
- 6. The sixth paragraph should be revised as follows:

"This easement shall automatically cease upon delivery to Dow Corning of the Certification of Completion of the Work, as defined in Section XVI of the Consent Decree. Provided, however, that nothing in this easement shall be deemed to limit the power and authority of the USA [or whatever defined term you use for the United States] to take, direct or order all appropriate action to protect human health and/or the environment or to prevent, abate or minimize an actual or threatened release of hazardous substances on, at or from the Site."

7. There is no need to have the United States as a signatory to the easement unless required by Kentucky property law, as it is a conveyance document only.

Please send the revised easement to my attention for EPA review and approval. If you have any questions, please fell free to give me a call at (404) 347-2641 extension 2278. I look forward to resolving this issue soon.

Sincerely,

Brooke F. Dickerson

Assistant Regional Counsel

OCT 16 2 OS PM '91

October 15, 1991

Recid one Copy - Ny REMEDIAL BRANCH

(517) 496-4710

Writer's Direct Dial

Mr. Nestor Young Remedial Project Manager Waste Management Division US EPA Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

Ms. Brooke Dickerson Office of Regional Counsel US EPA Region IV 345 Courtland Street, NE Atlanta. Georgia 30365

RE: Sampling and Analysis Plan

> Final RD Work Plan Howe Valley Landfill RD/RA Activities Under Civil Action No. C 91-0215 L-A

Dear Nestor and Brooke:

Pursuant to Article VII.D.2. of the above referenced Consent Decree, Dow Corning is providing 1 copy of the Final RD Sampling and analysis Plan for the Site. Dow Corning, through its consultant Hatcher-Sayre, Inc. has made the changes you requested in your letter of September 23, 1991.

Please call me at the number above if you have any questions, or contact Hatcher-Sayre directly.

Sincerely,

Edward C. Ovsenik Staff Attorney

Admin Law C01242

CC: James Mersereau-Kempf, MID129 James Knauss, Hatcher-Sayre, Inc. Carroll Coogle, ELIOD1

ECO/eo HOWEVALL\RDSAPPL.cov

DOW CORNING CORPORATION

Addresses:

Freight & UPS 2200 W. Salzburg Road Auburn, MI 48611

First Class & Parcel Post Legal Department C01222 Midland, MI 48686-0994

Factimile: (517) 496-5849 (1) (517) 496-6354 (11) Telex: 189806000

| TES Work Assignment Performance Evaluation Report*   |                |                |   |                   |                           |          |                           |                                    |  |
|--|----------------|----------------|---|-------------------|---------------------------|----------|---------------------------|------------------------------------|--|
| EPA X  |                |                |   |                   |                           |          |                           | Contractor                         |  |
| Region   |                | RAV<br>RCLA    |   |                   | acility                   | Number   | Task                      | Prime Contractor/<br>Subcontractor |  |
| 4  | CER            | CLA            | Но                                      | we Va             | .11ev                     |          | RI/FS_                    | DYNAMAC                            |  |
| Work<br>Assignment   |                |                |   | Evaluation Period |                           |          |                           | Milestones Evaluated               |  |
| CO 4050  |                |                | 0                                       | Fron              | From: 5/1/91 To: 10/31/91 |          | /91                       | NONE                               |  |
| Performance<br>Criteria  |                |                | Perf. Rating Hating Justification (1-5) |                   |                           |          |                           |                                    |  |
| A. Technical     Effectiveness of Analysis/     Originality of Products     Organization     Support (e.g., Adherence to Regulations and Procedures)     Approach     Thoroughness       |                |                | 3                                       | No work           | was perfor                | med duri | ng the evaluation period. |                                    |  |
| B. Schedule     Responsiveness (e.g., Work Plan Development, Deliverables)     Priority Adjustments     Adherence to Established Period of Performance                                   |                | 3              | Same as a                               | above.            |                           |          |                           |                                    |  |
| C. Cost - Budget M - Cost Mini - Project LOE - Travel Equipme - Accuracy   | mization<br>nt |                | ne                                      | 3                 | Same as                   | above.   |                           |                                    |  |
| D. Management - Resource Utilization - Subcontracting - Reporting - Equipment - Ouality Assurance - Travel - Data Review - Coordination/Communication                                    |                | <b>Purance</b> | 3                                       | Same as           | above.                    |          |                           |                                    |  |
| P.C.'s (C.P.I<br>Overall Ratio   |                |                | •                                       |                   |                           |          |                           |                                    |  |
| R.C.'s (R.M.'<br>Overall Ratin   |                |                |   |                   |                           |          |                           |                                    |  |
| 1. Unsatisfactory 2. Marginal 3. Satisfactory 4. Exceeds Expectations 5. Culstanding  EPA Primary Contact  Contractor Project Manager  EPA Regional Contact  Contractor Regional Manager |                |                |   |                   |                           |          |                           |                                    |  |

CDA and TER on terminaling

OCT 8 11 23 AM '91

REMEDIAL BRANCH

October 7, 1991

Nestor Young U.S. EPA - Region IV 345 Courtland St, NE Atlanta, GA 30365

Dear Mr. Young,

Enclosed please find three 20"x20" enlargements each for the General Tire & Rubber Landfill and the Howe Valley Landfill (PIC 91132). The original photography was obtained at a scale of 1:3,600 as you requested and then enlarged to make the prints. If you have any questions, please contact Gordon Howard or myself at the number listed below.

Sincerely,
THE BIONETICS CORPORATION

Scott G. Stephens Research Specialist



# FAX TRANSMITTAL COVER SHEET

| DATE:                              |
|------------------------------------|
|                                    |
| TO: Destor Cloudy                  |
| COMPANY: U.S. EPA                  |
| FAX NO: (404) 347-1695             |
| FROM: Ein Kinaurs                  |
| TOTAL PAGES (INCLUDING COVER):     |
| COMMENTS: Norton - Hora in a copa  |
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| told no to FAX it to you Call      |
| if you have any agentitions,       |
| JOB NO: 0064-00() O There          |
| HATCHER-SAYRE, INC.                |
| OFFICE NO: (606) 271-0269          |
| FAX NO: (606) 271-1204             |



September 19, 1991

Edward C. Ovsenik, Esq. Legal Department Dow Corning Corporation 2200 Salzburg Rd. CO1242 Midland, MI. 48686-0994

> Re: Final RD Work Plan Howe Valley Landfill Hardin County, Kentucky Job No. 0064-001

Dear Mr. Ovsenik:

Attached is a draft copy of the "Final RD Work Plan" which incorporates the comments submitted by EPA in their letter to you dated August 19, 1991. The following specific comments were addressed:

- <u>Comment 1</u> Subsurface (bottom) sampling was incorporated for sampling location 7,D. Sampling location 1.5,D is too shallow to include any sampling at depth.
- <u>Comment 2</u> A pilot field testing program was included to verify the bench-scale testing under actual field conditions.
- <u>Comment 3</u> Separate "Sampling and Analysis" and "Health and Safety" plans are being submitted along with the Treatability Study Work Plan.
- Comment 4 The official schedule for the RD/RA activities was presented in Table 7. Figure 12 was a projected or proposed schedule to enable the remedial action to take place in 1992. As the figure indicates, document preparation and review times are both necessarily short in order for this schedule to be realized.

EPA must have misinterpreted the schedule presented in Figure 12. It indicates the Preliminary Design Report will be submitted 30 days after submittal of the Treatability Study Evaluation Report. The actual schedule calls for submittal of this report 30 days following EPA approval, which means we would essentially have to submit the Preliminary Design prior to EPA approval of the Treatability Study Report. If the projected schedule is followed, it places a greater burden on us rather than EPA.

Mr. Ovsenik September 19, 1991 Page 2



- Comment 5 The scheduled submittal data for the Preliminary Design was changed to indicate it was 30 days following the approval of the Treatability Study Evaluation Report. The deliverables indicating 15 copies to EPA were changed to 10 copies.
- <u>Comment 6</u> The phrase "and Consent Decree" was added as requested.

# General Response Comments -

- 1) The storm water discharge issue was incorporated into the "Plan for Satisfying Permitting Requirements".
- 2) It was noted that EPA approved dividing the RD/RA activities into an inorganic phase and an organic phase. We are currently initiating the Design of the Inorganic contaminant phase to attempt to have these soils removed by the end of this year.

If you have any questions, please give me a call. Following your review and approval, we will prepare 10 copies of the Final RD Work Plan for transmittal to EPA.

Sincerely,

HATCHER-SAYRE, INC

سا لمصب

James D. Knauss, Ph.D.

Project Manager

attachment cc: Jim Mersereau-Kempf Carroll Coogle

JDK/bh

October 4, REMEDIAL BRANCH

Mr. Nestor Young Remedial Project Manager Kentucky/Tennessee Sector North Superfund Remedial Branch U.S. EPA, Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

> Re: Howe Valley Landfill Hardin County, Kentucky Final RD/RA Work Plan Job No. 0064-001

Dear Mr. Young:

As we discussed earlier today, unfortunately, the 10 copies of the referenced document submitted to you last month did not include the revised Figure 12. Therefore, ten GBC-punched copies are being submitted at this time.

We are sorry for any problems this may have caused. If you have any questions on the figure, please give me a call.

Sincerely,

HATCHER-SAYRE, INC.

James D. Knauss, Ph.D.

Project Manager

JDK/pdh

Attachments

cc: Ed Ovsenik

Jim Mersereau-Kempf

Carroll Coogle

# SEP 31 11 12 AM '91

LEGAL DEPARTMENT

September 30, 1991

REMEDIAL BRANCH

(517) 496-4710

Writer's Direct Dial

Mr. Nestor Young Remedial Project Manager Waste Management Division US EPA Region IV 345 Courtland Street, N.E. Atlanta, Georgia 30365

Ms. Brooke Dickerson Office of Regional Counsel US EPA Region IV 345 Courtland Street, NE Atlanta, Georgia 30365

RE: Final RD Work Plan Howe Valley Landfill RD/RA Activities Under Civil Action No. C 91-0215 L-A

Dear Nestor and Brooke:

Pursuant to Article VII.C. of the above referenced Consent Decree, Dow Corning is providing 10 copies of the Final RD Work Plan for the Site. Dow Corning, through its consultant Hatcher-Sayre, Inc. has made the changes you requested in your letter of August 19, 1991.

Please call me at the number above if you have any questions, or contact Hatcher-Sayre directly.

Sincerely,

Educal C. Overte

Edward C. Ovsenik Staff Attorney Admin Law C01242

CC: James Mersereau-Kempf, MID129
James Knauss, Hatcher-Sayre, Inc.
Carroll Coogle, EL1001

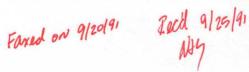
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DOW CORNING CORPORATION

Addresses:

Freight & UPS 2200 W. Salzburg Road Auburn, MI 48611

First Class & Parcel Post Legal Department C01222 Midland, MI 48686-0994 Facsimile: (517) 496-5849 (I) (517) 496-6354 (II) Telex: 189806000





September 19, 1991

Mr. Nestor Young Remedial Project Manager U.S. EPA, Region IV 345 Courtland St., NE Atlanta, GA. 30365

> Howe Valley Landfill Re: Hardin County, Kentucky RD Treatability Study Job No. 0064-001

Dear Mr. Young:

As Tim Young from our office mentioned to you earlier this week, Dow Corning Corporation has a concern about Hatcher-Sayre conducting the bench-scale treatability study for the Howe Valley Site. They would prefer to obtain the services of a third-party, independent subcontractor so that no one can question the objectivity of the study. As we indicated to you earlier, we concur with Dow Corning in this matter, however, we were unable to locate a contractor that had the capability or that was not afraid of any associated liability.

Dow Corning has since located a company that indicates they have the desire as well as the capability of conducting this study. We are in the process of setting up a meeting and reviewing their facilities to establish their capabilities in this area. We are attaching some preliminary information on the firm which had been transmitted to Dow Corning. It appears that the meeting cannot be held until October 2 or 3, 1991. We should be able to revise the Treatability Study Work Plan shortly thereafter and submit for your approval.

We have completed the revisions to the RD Work Plan and should receive early next week. Please call if you have any questions or this is not acceptable to EPA.

Sincerely,

HATCHER-SAYRE, INC.

Ques or Ciso James D. Knauss, Ph.D.

Project Manager

attachment Ed Ovesnik

Jim Mersereau-Kempf

JDK/bh

# **The Dragun Corporation**

3240 Coolidge • Berkley, MI 48072-1634 • 313-542-2420 • FAX 313-542-1719

June 17, 1991

Mr. Ed Ovsenik Dow Corning Corporation 2200 West Salzburg Midland, MI 48686

| Post-It™ brand fax transmittal r | nemo 7671 # of pages > 2 |
|----------------------------------|--------------------------|
| To No. J. Knauss                 | From E. C. Ousenik       |
| Co. Hatcher-Sone                 | Co. Daw Corning          |
| Dept.                            | Phone # 517-496-4710     |
| Fax# 606 - 271- 1204             | Fax# 517 - 496 - 5849    |

Dear Mr. Ovsenik,

A few days ago, an environmental attorney for whom I conducted an environmental project in California in the early 1980's phoned me. During our conversation, she asked, "Are you still the two-man operation you were in 1988?"

Her question shocked me. At that moment, I realized that I have done a terrible job updating our clients and friends about our growth and capabilities. But my answer shocked her. I told her that:

- We now have not two, but 25 associates.
- During the past year, our associates have conducted projects on the East Coast (e.g. New Jersey, Massachusetts, South Carolina), on the West Coast (e.g. California, Washington State), and on the Gulf Coast (e.g. Alabama, Louisiana, Florida).
- Our engineering group, which authors feasibility studies and designs and handles soil and groundwater cleanups, is comprised of six environmental, civil, mechanical, geotechnical, hydraulic, and mining engineers.
- We have our own computer-aided design system which is supported by three terminals.
- Four of our hydrogeologists and two of our geologists author work plans and conduct soil and groundwater remedial investigations under RCRA and SARA. These associates have conducted hydrogeological investigations in the USA, Canada, Europe, New Zealand, and Australia.

- Two of our associates, who handle our clients' RCRA waste management issues and audits, are Certified Hazardous Materials Managers (CHMMs).
- Our associates have conducted projects for 25 of the Fortune 50 industrial companies.
- Several sources have told us that our technical conference proceedings library is more complete that that of the Library of Congress.
- Our environmental fate and process laboratory has been conducting bench testing on chemical behavior in soilgroundwater systems and in soil treatment technologies for the past four years.
- We have developed environmental fate test methods and have authored test protocols which are utilized today by environmental laboratories in North America, Europe, and Asia.
- We are the fastest-growing privately-held company in Michigan, based on "Detroit News" statistics (thanks to our clients!).

As she could see, our "two-man operation" has grown substantially during the past four years. So, what do <u>you</u> think is the major factor in our considerable growth?

Sincerely,

THE DRAGUN CORPORATION

James Dragun, Ph.D., PSS

President



### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

Sent by Fax 9/23/91 Mouled on 9/23/91

September 23, 1991

Mr. Edward C. Ovsenik Staff Attorney Dow Corning Corporation Administrative Law CO 1242 P.O. Box 994 Midland, Michigan 48686-0994

RE: Draft Remedial Design Sampling and Analysis Plan, and Health and Safety Plan for the Howe Valley Landfill Site.

Dear Mr. Ovsenik:

The U.S. Environmental Protection Agency (EPA) has completed reviewing the Draft Remedial Design Sampling and Analysis Plan for the Howe Valley Landfill Site, dated July 31, 1991. Generally, the document appears to be substantially in conformance with the requirements of the Consent Decree (CD) and the Remedial Design/Remedial Action Scope of Work (SOW). However, a few issues need to be addressed prior to final approval of the plan. Please review the attached comments and make the necessary changes to the document for re-submittal by October 18, 1991 (submit only one copy for review, additional copies will be requested upon approval).

The EPA has also reviewed the Remedial Design Health and Safety Plan, and finds it acceptable. The Plan appears to be consistent with the SOW.

Should you have any questions concerning EPA's review comments, please do not hesitate to call me at (404) 347-7791.

Sincerely,

Nestor Young

Remedial Project Manager Kentucky/Tennessee Section

North Superfund Remedial Branch

pc: Jim Knauss, Hatcher-Sayer, Inc.

Carl Millanti, KNREPC Susan Bush, KNREPC

### The

# U.S. ENVIRONMENTAL PROTECTION AGENCY Review Comments for the Howe Valley Landfill Remedial Design Sample and Analysis Plan

### September 23, 1991

### **GENERAL COMMENTS:**

- 1. Although the EPA's Region IV Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual (SOP) is cited in several locations in the text, and three SOP appendices are also referenced and incorporated in the Plan, it should be clearly stated that <u>all</u> sampling activities will be conducted in accordance with the SOP. Additionally, any modifications or changes made to the established protocols or approved plans should be approved by EPA, or its representatives. Failure to communicate these changes could lead to problems with data reliability.
- 2. The Plan outlines sampling of the metal contaminated areas, but does not mention sampling of the organic contaminated areas. Is the extent of contamination in the organic contaminated areas thoroughly delineated? An explanation why these areas are not being sampled should be provided.
- 3. According to the approved work plan, the Preliminary Design Report will include the results of the data acquisition activities conducted during the project planning phase. Therefore, the Sampling and Analysis Plan must include a schedule for the sampling activities outlined.

### SPECIFIC COMMENTS:

1. Section 1.2 REMEDIAL ACTION SUMMARY, Page 1, first paragraph.

The word "contaminated" in the second sentence should be changed to "containerized". The sentence should read, "...removal of containerized and non-containerized wastes from the Site."

Additionally, it is recommended that the last sentence in this paragraph be reworded to accurately depict the dye trace study that was performed (i.e. in reference to the karst geology limiting the ability to sample groundwater directly under the site).

# 2. Section 2.3 Metal-Contaminated Soil Sampling, Page 5.

The plan does not provide for additional sampling, in the event that contaminant concentrations in the samples being collected are found to exceed the action levels. Since the objective of this sampling is to define the extent of contamination, then the plan should include provisions for this contingency.

Laboratory results for the Metals Contaminated Area shall be reported to the EPA prior to starting the remedial design. The EPA must agree on the extent (volume) of contaminated soil to be removed.

### 3. Section 2.3.3 Soil Sampling Techniques, page 6.

The samples for TCLP analysis should be obtained from the sample collected for the other chemical analyses. For example, one soil sample should be collected and divided into separate portions for the various analyses.

Alternatively, the EPA suggests that the samples for metals analysis be collected and tested first. Then, based on the results of this analysis, the samples for TCLP analysis should be collected from the locations of the highest metal concentrations. The TCLP sample should be a composite sample from these sample locations.

Also, surface soil samples should be collected from 0-6 inches or 0-12 inches below land surface. Soil from the top six inches of the ground surface should be included as part of the sample, unless a reasonable justification can be provided.

### 4. Section 2.5 <u>Surface Water and Sediment Sampling</u>, page 12.

According to the Record of Decision, "Ground water associated with the Site will be monitored at Boutwell Spring and any other wells or springs that lie between Boutwell Spring and the Site." The springs on Mr. Goodman's property were not located during placement of the dye trace detectors (bugs). This property is located south of the site at an elevation such that any springs located on the property are most likely hydraulically connected to the Site and Boutwell spring. In view of this, any springs found on Mr. Goodman's property (or any others not previously identified) must be sampled and analyzed for the contaminants of concern. Since springs are the sole monitoring points for groundwater, it is essential that they be sampled if found to exist.

As mentioned in the general comments section, a schedule for sampling the on-site sinkhole and Boutwell spring shall be provided. Additionally, the schedule shall include the site inspection and sampling of the Goodman Springs.

5. Section 2.5.1 Flow Measurements, page 12.

This section requires more detail. What surface waters and/or streams will be measured? What is the rationale for collecting these measurements? What will the data be used for?

The equipment utilized for determining the flow rates should be included in the Field Analysis section. Specifically, details regarding the "current meter" should be discussed.

6. Section 2.5.2 <u>Water/Sediment Sampling Equipment/Techniques</u>, page 13, last paragraph.

The sediment sample containers for purgeable organic compound analysis must have septum sealed caps.

7. Section 2.5.4 <u>Specific Sampling Equipment Quality Assurance Procedures</u>, page 14.

It should be made clear that all water and sediment sampling equipment will be cleaned (using procedures outlined in EPA's SOP) prior to collecting each sample, and not only after field use and before being stored -- as this section suggests. A statement similar to the one used in Section 2.3.5 (first sentence, second paragraph), regarding cleaning procedures for soil sampling equipment, would be appropriate in this section.

8. Section 3.1 Data Quality Objectives, page 15.

Please clarify which "tasks" are being referenced in the second sentence, and define "Level IV" data quality objectives.

9. Section 3.2 Field Quality Control Samples, page 15.

Table 1 appears to be incomplete; there are no analytical parameters listed for the On-site Water and Sinkhole Sediment samples.

Also, it should be noted that, on occasion, the EPA will provide blanks and spikes samples to monitor QA/QC procedures. In addition, the EPA may also obtain a representative number of split samples.

10. Section 3.3 <u>Sample Identification and Chain-of-Custody</u>, page 15.

Chain-of-custody procedures should be thoroughly presented. The procedures should describe how the samples are handled from the point of collection to the laboratory.

These procedures must include use of custody seals. Custody seals are required on all sample bottles, and should also be placed on the strapping tape used to secure the coolers or shipping containers.

11. Section 3.6 Laboratory Analysis, page 19, second paragraph.

Since the CLP procedures are being referenced for Wadsworth/Alert Laboratories, Inc., then please state the specific number and date of the EPA CLP Statement of Work for Organics and Inorganics (issued to Wadsworth/Alert).

Also, please list the quantitation limits for each of the parameters being analyzed.



#### REGION IV

345 COURTLAND STREET, N.E. ATLANTA, GEORGIA 30365

DATE:

SEP 2 3 1991

SUBJECT:

Comments on the Review of the Remedial Design Sampling and Analysis Plan for the Howe Valley

Landfill in Hardin County, Kentucky

TO:

Nestor Young

Remedial Project Manager

North Superfund Remedial Branch

FROM:

Ground-Water Technology Support Unit Kaywischkaener
Jon Isbell

THROUGH:

Ground-Water Technology Support Unit

The following comments are provided after reviewing the Remedial Design (RD) Sampling and Analysis Plan for the Howe Valley Landfill in Howe Valley, Kentucky. The plan involves additional sampling to delineate the remedial areas for the site.

1. Page 1, Section 1.2, first paragraph: Dye Tracing:

It is recommended that the last sentence in this paragraph be reworded in order to accurately depict the dye tracing that was performed. Two separate dye traces were performed at the site during high and low flow conditions. The sampling points are Boutwell Spring and the springs on Mr. Randy Goodman's property.

2. Page 12, Section 2.5, last sentence: Spring Sampling:

The springs on Mr. Goodman's property were not located during placement of the dye trace detectors (bugs). This property is located south of the site at an elevation such that any of the springs (not just the ones so far identified) are most likely hydraulically connected to the site and Boutwell Spring. In view of this, any springs found on the Goodman property should be sampled and analyzed for the contaminants of concern for the site. Since springs are the sole monitoring points for ground water it is essential that they be sampled if found to exist.

Page 13, Section 2.5.2, first paragraph: Water Sampling:

In addition to the onsite sinkhole and Boutwell Spring, the springs on Randy Goodman's property should be added as sample collection points.

Printed on Recycled Paper

Recd 9/23/91

# 4. Page 16, Table 1: Sampling Parameters:

Trichloroethene (TCE) should be added to the list of parameters underneath the headings Boutwell Spring water and sediment. On-site sinkhole water and sediment should be analyzed for the same compounds as Boutwell Spring water and sediment. As previously mentioned, the Goodman springs should be sampled and analyzed, if they are found to be present, for the same list of parameters as well.

If you have any additional questions concerning this memo or the Howe Valley site contact me at X3866.



Recid 9/19/91

September 12, 1991

Mr. Nestor Young U.S. EPA, Region IV 345 Courtland St. NE Atlanta, GA. 30465

Re: Treatability Study Work Plan

Dear Mr. Young:

As we discussed on September 11, 1991, you indicated if the Treatability Study Work Plan was going to be more than a day or so late, to fax you a letter regarding this matter. As you know, we assembled the plan over the weekend and submitted the study to Dow Corning late Monday. As of Wednesday, representatives from Dow Corning were going to review the plan and get back to us. I have not been able to make contact with Ed Ovsenik or James Mersereau-Kempf today and therefore, request an extension for delivery to you September 18, 1991.

As always, if you have any questions or require further discussion, please contact me at your convenience.

Sincerely,

HATCHER SAYRE, INC.

Timothy J. Young Vice President,

Environmental Services

TJY/bh



September 12, 1991

Mr. Nestor Young U.S. EPA, Region IV 345 Courtland St. NE Atlanta, GA. 30465

Re: Treatability Study Work Plan

Dear Mr. Young:

As we discussed on September 11, 1991, you indicated if the Treatability Study Work Plan was going to be more than a day or so late, to fax you a letter regarding this matter. As you know, we assembled the plan over the weekend and submitted the study to Dow Corning late Monday. As of Wednesday, representatives from Dow Corning were going to review the plan and get back to us. I have not been able to make contact with Ed Ovsenik or James Mersereau-Kempf today and therefore, request an extension for delivery to you September 18, 1991.

As always, if you have any questions or require further discussion, please contact me at your convenience.

Sincerely,

HATCHER BAYRE

Vivol (4 V. Ja

Timothy o. Young Vice Bresident.

Environmental Services

TJY/bh



# FACSIMILE COVER SHEET

# U.S. Environmental Protection Agency

Office of Emergency and Remedial Response Hazardous Site Control Division (OS-220W) Washington, D.C. 20460

| Date: 9/10/91              | Pages Transmitted: 3              |
|----------------------------|-----------------------------------|
| TO: Nestor Young           | <del>-</del>                      |
| Region/Lab/Firm: Region    | 4 / NSRB                          |
| Fax Number: FTS 257-4464   | Phone Number: <u>F73 257-7791</u> |
| FROM: Ken Skahn            | /Demb                             |
| Phone Number: FD 3 98-8355 | -                                 |
| Comments:                  |                                   |
| •                          |                                   |
|                            |                                   |
|                            |                                   |

Transmitted from:

Office of Emergency and Remedial Response

Hazardous Site Control Division

(Crystal Station, 6th floor)

Phone: FTS 398-8313, (703) 308-8313 Fax: FTS 398-8389, (703) 308-8389



### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

SEP 1 0 1991

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

### MEMORANDUM

Review of the Remedial Design Sampling and Analysis SUBJECT:

Plan and Health and Safety Plan for the Howe Valley

Landfill Site, KY

Ken Skahn, RD/RA Coordinator for Region IV DCMB/HSCD/OERR PROM:

Nestor Young, RPM, Region IV TOI

Based on my review of the subject documents, I offer the following comments:

### Sampling and Analysis Plan

- 1. Section 2.3, Metal-Contaminated Soil Sampling a. The plan should be modified to provide for additional sampling if contamination above action levels is found at an outlying (10 ft. from the hot spot) sample point.
  - b. The PRP should report and discuss sample analysis results with EPA before starting the design. There should be agreement on the extent of contaminated soil to be removed.
  - c. The TCLP should be run on a composite of only those samples where contamination is found to be above the action levels in order to provide the most conservative results.
- 2. Organic Contaminated Soils -- The PRP should be asked Why samples of the soil in Areas 3, 4, & 5 are not being collected and analyzed at this time. Is the extent of contamination in these areas already well-defined?
- 3. Section 2.5.2, Water/Sediment Sampling Equipment -- The plan calls for sediment samples to be collected using a spoon or scoop. I believe a sampler with a closing cover should be used (if the sediment is below water) so that the sediment can be collected, covered, and withdrawn from the water without disturbing the sample.
- 4. Chain-of-custody procedures (page 15) should be more

thoroughly presented; the procedures should describe at least the typical handling for a sample from the point of collection through laboratory analysis.

### Health and Safety Plan

5. The health and safety plan appears to be acceptable as is.

### Quality Assurance Program Plan

6. As discussed, I did not review the QAPP as you are relying on others in Region IV to provide qualified review support for that document.

If you have any question regarding these comments, or need further assistance, please call me at FTS 398-8355.